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AIR FORCE SERVICES FACILITIES DESIGN GUIDE

DESIGN:
VISITING QUARTERS

AIR FORCE SERVICES FACILITIES DESIGN GUIDE (AFSFDG)

VISITING QUARTERS

AIR FORCE SERVICES AGENCY

Record of Changes (changes are indicated by **1**\ ... /**1**/)

Change No.	**Date**	**Location**

The format of this document conforms to UFC 1-300-01; however, it has not been adopted in the UFC (Unified Facilities Criteria) system.

FOREWORD

Air Force Services Facilities Design Guides (AFSFDG) provide planning, design, construction, sustainment, restoration, and modernization criteria, and applies to US Air Force Services projects. AFSFDGs will be used for all Air Force projects and work for other customers where appropriate.

AFSFDGs are living documents and will be periodically reviewed, updated, and made available to users for providing functional and technical criteria for military construction. Headquarters, U.S. Air Force Services Agency (AFSVA) is the OPR for this AFSFDG. This document has been coordinated and reviewed by AF/ILEC (Air Force Office of the Civil Engineer). Contact AFSVA for document interpretation and improvements.

This and other Design Guides may be found at http://www-p.afsv.af.mil/FC/. Hard copies of documents printed from electronic media should be checked against the current electronic version prior to use to ensure that they are current.

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CHAPTER 1 -- INTRODUCTION

1-1 PURPOSE AND SCOPE.

This guidance implements mandatory construction policies and processes approved for Visiting Quarters (VQ). These standards advance the goal of achieving consistent, enhanced quality facilities and at all installations. Developing and implementing facilities to achieve lodging excellence will help sustain a strong, productive, and viable Air Force. We are committed to the concept of private, comfortable lodging and all it contributes to improved quality of life.

This guide provides standards and considerations for planning, programming, and designing new, major renovations, and permanent conversion of existing facilities as new VQ regardless of funds source used for construction unless waived by HQ USAF/ILV.

Figure 1-1 VQ Design—Osan Air Base

1-2 DOCUMENT USERS.

This guide was developed for Commanders, Services lodging managers, Project Validation Assessment (PVA) authors, and Civil Engineering facility acquisition managers. It is also written so design architects, engineers, programmers, and planners can achieve consistent and enhanced quality lodging facilities throughout the Air Force.

This design guide is applicable to all projects in the continental United States and overseas, and applies to new Visiting Quarters construction and major lodging renovation projects.

1-3 DOCUMENT ORGANIZATION.

The criteria are organized to parallel the design process:

- Chapter 2 -- Planning and Programming. This section provides criteria relevant to site planning, project scope, funding, and execution of new or renovation VQ facility projects.
- Chapter 3 -- General Design Criteria. This section provides overarching technical design criteria such as codes and standards site design, overall building design, infrastructure, and building systems.
- Chapters 4 & 5 -- Design Criteria. This section provides detailed requirements for each functional space as well as illustrative design information. This section is divided into chapters for guest rooms and all other spaces.

1-4 LIMITATIONS.

This guide must be used in conjunction with other Department of Defense documents that give

related guidance. Unique design requirements of a specific project will be addressed at the installation level. This design guide is not a substitute for research required by programmers and designers. Further, programmers and designers must incorporate installation and Major Command design requirements such as architectural compatibility and systems requirements.

Required spaces and guest room space requirements are mandatory. All other programming and design requirements included in this guide are standards and/or recommendations subject to local requirements.

All work to existing facilities beyond cosmetic treatment (replacing carpeting, painting, wallcoverings installation, etc.) is considered major renovation. The term "renovation" is not a programming class of work, but describes the nature of the project being done.

1-5 GUIDE GOALS.

This design guide is intended to promote:

- Understanding of quality lodging facility design for guests
- Teamwork from requirements identification through beneficial occupancy
- Sustainable, accessible, secure projects that integrate current policies and standards.

1-6 MEASURING QUALITY.

Lodging facilities will reflect quality through appearance, fulfillment of functional requirements, and accomplishment of the objectives in this guide. User groups, planners, programmers, and designers should seek to deliver complete and usable facilities while seeking to achieve an understated excellence in design.

- Functionality. All spaces must interrelate efficiently to support lodging and lodging support operations.
- Best Value. Building systems and finishes must enhance productivity, conserve cost, minimize energy consumption, minimize maintenance, and meet scope requirements within budget limitations reflect the best value.
- Durability and Maintainability. Materials and finishes must be durable and maintain an acceptable appearance even after a high use level.
- Architectural Compatibility. Designs should reflect classic, functional, and quality architecture that fits in the visual environment.
- Sustainability. Designs should incorporate sustainable development principles.
- Quality of Life. Designs should satisfy guest needs for security and convenience.
- Consistent Design. Designs should incorporate standard guest room design, finishes, and materials.

CHAPTER 2 -- PLANNING AND PROGRAMMING

2-1 OVERALL CONSIDERATIONS.

This chapter provides basic guidelines for planning and programming new VQ and renovating existing lodging on Air Force installations. The size and number of guest rooms, suites, guest support areas, and service areas at each site may vary depending on the mission, but standard plans and requirements will remain static. Renovations will follow this guidance as closely as possible, understanding that variances will be made on a case-by-case basis. The Wing or Major Command has programming and design latitude and decision making authority in the following areas: site selection and exterior architectural treatment.

2-1.1 Project Team.

The Project Team will establish design criteria, specific goals and strategies, such as sustainable development principles, during programming, planning, design and construction, to ensure that all functional requirements are met and resolved.

- Commanders
- Services/Combat Support Flight Commanders/Lodging Managers
- Planners, Architects, Landscape Architects, Engineers, Interior Designers
- Base Support Team including Fire Department, Security Forces, Environmental, Bioenvironmental Engineering Safety, and other appropriate representatives
- Major Command Services and Civil Engineering representatives
- Headquarters, Services Agency lodging and facilities representatives

2-1.2 Project Planning

2-1.2.1 Project Initiation. A DD Form 1391, Military Construction Project Data, is required for each VQ project prior to a Project Validation Assessment (PVA), performed through Headquarters Air Force Services Agency. Reference *AFI 34-246, Air Force Lodging Program* for specific criteria. Copies of all programming documents will be provided to Headquarters Air Force Services Agency.

2-1.2.2 Project Definition. A Requirements Document/Project Management Plan (RD/PMP) is required to provide the design agent and the designer with information used in negotiating the design contract and completing the project definition phase. The information in this guide provides the basis for developing both. The RD identifies all major design issues, requirements and costs for initial design approval. The PMP identifies facility acquisition decisions. Refer to the *USAF Project Managers' Guide for Design and Construction* for useful information on the Project Definition phase.

Designs must conform to the Project Validation Assessment (PVA) scope and room count recommendations and the criteria in this guide. Overseas projects must consider building code, SOFA, and other mandatory requirements of host nations to ensure requirements for certification of compliance are met.

2-1.3 Functional Area Requirements.

The design and configuration of lodging facilities will employ most concepts of a mid-priced,

limited service private sector hotel—i.e., a hotel that does not have full-service food and beverage capability. The following table lists all functional areas typically found in central and satellite VQ operations facilities.

Table 2-1 VQ Facility Functional Areas

Facility Type		
Central	**Satellite**	**Areas**
		Guest Services
X	X	Guest Rooms
X	X	Porte Cochere
X	X	Entrance/Vestibule
X		Lobby
X	X	Lobby Lounge
X		Reception
X		Concierge
X		Food Service*
X		Retail Sales
X		ATM & Registration Machines (Kiosks)*
X		Public Toilets and Convenience Areas
X		Conference Room *
X	X	Guest Corridors/Circulation
X		Business Center
X	X	Guest Laundry
X	X	Vending/Ice Areas
		Administration Services
X		Training/Meeting Room
X		Luggage Storage
X		Lodging Communications
X		Administrative Areas
X		Storage Areas
		Floor Support
X	X	Janitor Areas
X	X	Housekeeping Areas
X	X	Utility Rooms (communications, electrical, etc)
		Back-of-House Support
X	X	Janitor Areas
X	X	Housekeeping Areas
X	X	Soiled Linen Storage
X	X	Clean Linen Storage
X	X	Receiving
X	X	Supply Areas
X	X	Utility Rooms (communications, electrical, etc)
X	X	Employee Areas (supports entire staff)
X	X	Grounds Equipment Storage*
X		Maintenance Workshop
X	X	Service Circulation

*as confirmed by the PVA

2-1.4 Project Site Planning.

Determining the appropriate site for a new VQ campus is the responsibility of the installation. The footprint and mass of a new VQ is significantly greater than traditional “dormitory style” facility configurations, thus serious consideration of an appropriate and adequate site is critical. Guidance on site location requirements for new VQ construction includes guest demands, square footage

requirements, building height allowance, force protection setback requirements, and available sites on an installation. The table below provides estimated acreage requirements, including standard 25m (83.7 ft) standoff distances [from roads and parking] and guest and staff parking, for projects of varying lodging room quantities to assist in identifying adequate sites for new facilities.

Table 2-2 Site Acreage Estimates for VQ

Guest Rooms	Floors (Stories)	Acreage	Hectares
100	3	2.9	1.4
200	4	4.3	2.0
300	5	5.3	2.4

Figure 2-1 Osan Air Base VQ Area Development Plan

Figure 2-2 Travis Air Force Base VQ Area Development Plan

Consider the following lodging facility site selection and planning factors:

- Compliance with the Base General Plan
- Base leadership (and Facilities Board) requirements
- Proximity to existing lodging facilities
- Development potential, future expansion, and adjoining land uses. Expansion potential for lodging facilities usually involves the addition of more guest rooms. It is generally impractical to build an addition onto an existing lodging facility. If the potential for adding additional guest rooms to a lodging facility project is identified during the initial programming stage, allow space in the site development plan for additional structures and size site utilities accordingly.
- Force protection, accessibility, and environmental considerations
- Proximity to and capacity of recreational centers and community facilities such as fitness centers, dining facilities, postal service centers, base exchanges, commissaries, pedestrian circulation systems, bike paths, and mass transit routes. The proximity to community services must be balanced with the need for quiet and privacy.
- Existing topography and landscape. Sites should be selected that minimize the potential for excessive grading.
- Available base infrastructure such as roads and drives, parking, landscape, and fire department access
- Adjacencies, relationships, site attributes, development potential, building footprints
- Future demands placed on the capacity of supporting infrastructure and utilities
- Utility availability and utility location
- Vehicle circulation system, including public transportation access
- Existing walkways, designated bike and jogging paths
- Facilities requiring demolition
- Off-base communities and adjoining neighborhoods
- Other factors as might be determined by the design program and local conditions.

2-2 PROJECT SCOPE

2-2.1 General Considerations.

A key factor in the success of a lodging operation is planning prior to design development to fully understand guest needs and the services required to satisfy these needs.

The initial primary facility scope of a VQ project can be programmed using the standards and criteria contained in *AFH 32-1084 Facility Requirements* and this guide. Headquarters, Air Force Services Agency, Lodging Branch (HQ AFSVA/SVOHL) will provide the number and types of rooms (standard & accessible guest rooms and suites) based on usage data. Planning shall incorporate accessibility requirements in all common guest support areas.

Allow space for guest support areas, back-of-house service areas, and site requirements. Replacement of existing support functions will be considered in the programming of a new facility.

The final determination of the project scope will be based on the results of an independent Project Validation Assessment (PVA) performed through Headquarters Air Force Services Agency. The Project Validation Assessment validates the site selection, determines the overall number of room types, support areas, guest services to be provided, and identifies any companion appropriated fund (APF) projects necessary to provide a complete and usable facility.

The facility space program will consider:

- Official, current and projected guest utilization served by the proposed facility,
- Potential for retention and renovation of existing facilities,
- Need for additions/alterations versus completely new construction projects, and
- Existing on-base community facilities and their potential for meeting current and future needs.
- Additional requirements such as surge conditions, significant transient crew requirements, and historic number of long-term temporary duty commitments will be considered.

VQ military construction projects will comply with the design and construction guidance that establishes the absolute size for the net living area in Table 2-2. Commands desiring a waiver from these absolute planning factors must submit a fully justified request, formatted as a normal congressional reprogramming action, and an economic analysis to Headquarters, Air Force Services through the Headquarters, Air Force Services Agency.

Table 2-3 Net Area Standards—New Construction and Renovation

Room Type	With Shower	With Shower/Tub
Standard Guest Room	27.2 m^2 (293sf)	27.5 m^2 (296sf)
Accessible Guest Room	30.2 m^2 (325sf)	NA
Suite	55.5 m^2 (597sf)	55.9m^2 (602sf)
Accessible Suite	56.3 m^2 (606 sf)	NA

2-2.2 Determining Guest Room Types.

Standard guest room, accessible guest room plans, suite plans, and accessible suite floor plans have been developed for design of new VQ. All guest rooms will be single occupancy for all ranks (except under surge conditions) and shall include sleeping/living areas and private shower rooms. These floor plans are discussed in detail later in this guide as well as conceptual layouts and recommendations for service areas and guest support areas. The mix of these plans recommended in the Project Validation Assessment (PVA) must be used for all new VQ construction.

2-2.2.1 Guest suites shall include bedroom, bath, and a combined living/dining area for all ranks. The aggregate total of programmed and existing inventory of distinguished visitor suites (officer, enlisted combined) will not exceed 5% of total installation inventory.

If the existing number of suitable suites at an installation exceeds this 5% ceiling, new construction and major renovation will not include VQ suites. A waiver of this policy and any other exception such as surge requirements or security will require approval by Headquarters, Air Force Services. Building size and scope compliance will be determined by using net square footage.

2-2.2.2 Accessible Rooms. Five percent (5%) of all installation guest rooms and suites will be designed as accessible. Use Table 2-4 for determining actual numbers of rooms.

Table 2-4 Required Number of Accessible Rooms

Number Rooms	Accessible Rooms	Rooms with Roll-in Showers
1 to 25	1	
26 to 50	2	
51 to 75	3	1
76 to 100	4	1
101 to 150	5	2
151 to 200	6	2
201 to 300	7	3
301 to 400	8	4
401 to 500	9	4 plus 1 for each additional 100 over 400
501 to 1000	2% of total	
1001 and over	20 plus 1 for each 100 over 1000	

2-2.3 Gross Building Area.

Gross Building Area is measured to the outside face of the exterior enclosure walls. Refer to *AFH32-1084 Facility Requirements* for more information on scope calculation.

Gross Building Area also includes:

- Exterior areas such as covered walkways and balconies count as half scope and are measured from the face of the enclosure wall to the edge of the covered area.
- Exterior unenclosed stairs count as half scope per floor that they serve
- Interior stairs and elevator shafts count as full scope per floor that they serve

Gross Building Area does NOT include roof overhangs less than three feet wide and are unsupported by columns in gross building area.

There is flexibility, by waiver, in gross square footage to allow for varying factors resulting from different construction methods and materials that may be required, especially overseas. Lodging facility renovation projects must comply with the required sizes for the Net Living Area, but may exceed, by waiver, the Gross Building Area requirements due to pre-existing conditions.

Newly constructed VQ will include the required spaces with their associated prescribed sizes as listed in Appendix A and the attached ***Space Calculator***. Spaces can be adjusted if one area needs to be slightly larger than another.

2-2.4 Special Considerations for Renovations.

Lodging renovations range from building and system upgrades to complete reconfiguration. The requirements and recommendations in this design guide apply to new construction and to renovations. Some flexibility in complying with established guidance contained in this design guide is allowed for renovated facilities, but they must include the required spaces to the extent possible. Flexibility in design may be considered based on existing conditions and physical limitations such as construction type, location and character of load bearing walls and columns, and others.

Additional information and guidance regarding work classifications, funds sources and approval

levels may be found in the following publications: *AFI 34-246, Air Force Lodging Program, AFI 32-1022, Planning and Programming of Non-appropriated Fund Facility Construction Projects, and AFI 32-1032, Planning and Programming Real Property Maintenance Projects using Appropriated Funds.*

2-3 FUNDING CONSIDERATIONS FOR NAF PROJECTS.

Additional special factors and funding sources must be considered when establishing initial project cost estimates to assure a complete and usable facility. Reference AFI 65-106, *Appropriated Fund Support of Morale, Welfare, and Recreation and Non-appropriated Fund Instrumentalities* for guidance regarding work classification, fund sources, and approval levels of non-appropriated fund (NAF) projects. Note: When cost estimates differ from PVA-furnished cost estimates, specific justification must be provided.

Table 2-5 VQ Funding Sources (for projects funded with NAFs)

	AFSVA Construction	AFSVA Project FF&E	Base/ MAJCOM
Design/A-E Services	X		
Site Design	X		
Signage	X		
Site Amenities	X		
Service Area Fencing	X		X
Companion Projects			X
Architecture	X		
Force Protection	X		
Security Systems			X
Interior Design (SID package)	X		
Equipment/Appliances (CF/CI)	X		
Loose Furnishings/Draperies (GF/GI)		X	

2-3.1 Site Cost Considerations

Site Analysis Costs. Project programmers must consider costs for:

- Preliminary soils analyses essential to determine whether extensive site work and foundation costs are required. Also, organic soil analyses for exterior landscape plant materials may be required.
- Local environmental and climatic conditions such as heavy snow loads, wind loads, high humidity, and extreme temperatures result in additional costs due to structural, and to a lesser extent, insulation requirements.
- Projects located in areas prone to seismic activity.
- Projects located in designated historic districts may incur additional cost in order to ensure compliance with historic preservation requirements.
- Projects must start on a “clean” site and may require companion appropriated fund (APF) projects to be accomplished prior to the start of the VQ project. A clean site is defined as an environmentally clean site with all structures and fencing removed, and all infrastructure relocated. Reference AFI 32-7062 Air Force Comprehensive Planning foradditional guidance.

This is a base or Major Command responsibility.

2-3.1.2 Site Grading. Headquarters, Air Force Services Agency will fund site development costs within the project to include cut/fill and other work to make the site usable.

2-3.1.3 Site Amenities. VQ projects will include outdoor passive and/or active use areas, pavilions and/or site amenities as required per installation. These features must complement the architecture of the campus, and will include project-funded amenities such as walks, site lighting, landscaping, pavilions, benches, trash receptacles, and fencing if used to screen equipment or dumpsters enclosures only. Additional amenities such as barbecue grills and tables are permitted, but are the funding responsibility of the base or Major Command.

2-3.1.4 Infrastructure. Communications and infrastructure requirements for lodging are similar to demands of the commercial hotel industry. Companion appropriated fund (APF) projects may be required to support necessary upgrades and alterations and will be studied to determine if separate funding must be obtained through the base or Major Command. Lodging funds cannot be used to construct base infrastructure. Programmers must determine these requirements and include them in the construction budget if they are associated with the cost of supporting facilities.

2-3.2 Building Systems Cost Considerations

2-3.2.1 Mechanical Systems. The type of mechanical system selected has a major impact on the cost of the project. Determine if existing energy sources have the capacity to supply the new construction. If not, the new VQ campus may justify its own central energy plant. Conduct a Life cycle cost analysis to determine the most cost effective mechanical system for each facility whether it is a central system or individual systems for each guest room. Make decisions as early in the programming or design process as possible.

2-3.2.2 Security Systems. Funding for security systems such as intrusion detection systems will be the responsibility of the base or the Major Command.

2-3.2.3 Fire Protection Systems. Fire protection systems for lodging facilities may result in incur additional costs due to the repetitive nature of lodging facility designs, their occupancy classification, and system type. The system selected may increase the water demand for the project.

2-3.3 Building Design Cost Considerations

2-3.3.1 Codes and Standards. All current standards for force protection, sustainability, and accessibility will be incorporated. Design options will not be excluded because of increased cost without further analysis. Additional investments for one building system can often reduce the first costs in other systems through an integrated design approach. For example, downsizing the HVAC system can offset the increased cost of energy efficient lighting systems, which produce less heat. For further information and guidance, reference the USAF Sustainable Facilities Guide.

Projects will conform to *UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings* and will consider the impact these standards have on the overall construction cost of the project. Coordinate with the base security forces personnel for additional local guidance or requirements. Specific force protection requirements such as chemical/bio collective protection systems are installation specific, especially in overseas locations; and will not be included in project funds. Accessibility and universal design is essential in lodging design and construction. Accessibility guidance is provided in the *Uniform Federal Accessibility Standards* and the *Americans with Disabilities Act Accessibility Guidelines*.

2-3.4 Other Design Cost Considerations

2-3.4.1 Special Design Features. Expenses associated with special design features in a guest room or suite can account for a large portion of the total project cost because the features are continuously repeated. Programmers and designers must be aware of current unit cost factors. Programmers will only use unit costs; therefore, designers must be concerned about the cost impact of special design features.

2-3.4.2 Guest Room Proportions. Guest rooms and suites dimensions are critical and are provided in the attached CAD drawings.

2-3.4.3 Signage. Signage, including the primary exterior monumental sign, all interior and exterior building signage, including room and informational signage, will be coordinated throughout and accomplished with project funds. Required site signage, including parking and street signage, is a responsibility of the base and Major Command. All signage will be in accordance with the installation signage program and *UFC 3-120-01, Air Force Sign Standards*.

2-3.4.4 Interior Design. The Structural Interior Design (SID) package, equipment and appliances will be funded with project funds and will be Contractor Furnished/Contractor Installed (CF/CI). Interior finishes, built-in cabinetry, door finishes, hardware finishes, toilet accessories, chair rails, corner guards, and interior signage are included and will be provided and installed by the contractor. Typically, the Furniture Fixtures and Equipment (FF&E) package is funded with separate lodging funds and will typically be Government Furnished/Government Installed (GF/GI) after completion of the construction or renovation project.

2-4 PROJECT EXECUTION

2-4.1 Design and Construction Process.

Insure the entire facility design management team is involved early in the project process. A design "charrette" session serves as a kick off to the design phase. Charrette goals are to verify functional requirements, confirm individual space requirements, confirm the overall scope, obtain "buy-in" from team members, and obtain Commander's endorsement.

Table 2-6 Project Execution Milestones

Phase	design-bid-build projects	design-build
Charrette	X	X
Project Definition (15% Design),	X	X
Request For Proposal		X
Preliminary (35% Design),	X	As required
Corrected (35% Design)/RFP	X	**X**
NAF Panel/CSAF Approval	**X**	**X**
Intermediate (65% Design),	X	As required
Pre-Final (95% Design)	X	As required
Final Construction Documents (100% Design)	X	As required
Congressional Release/OSD Approval	**X**	**X**
Construction or DB Contract Award	X	

CHAPTER 3 -- GENERAL DESIGN CRITERIA

This chapter provides general considerations and technical guidance relevant to all phases of design for new or renovated VQ. Guidelines are provided for planning and designing the site, building footprint, infrastructure, building systems, support functions, character and circulation, including detailed design requirements for each functional space. Specific information that expands on these overall principles must be developed for each individual VQ project.

New VQ projects should attain a high level of quality and design excellence as demonstrated with the Osan VQ project.

Figure 3-1 VQ Design—Osan Air Base

3-1 SITE DESIGN

3-1.1 General Considerations.

Site planning is one of the more important elements of any project design and can greatly impact the overall success of the VQ project. Involve the installation community planner, architect, landscape architect, and civil, mechanical, electrical, and communication engineers, and the Services staff.

Achieve spatial balance and scale through thoughtful placement and arrangement of structures, landscaping and landforms. Pay special attention to building orientation, mass and scale in developing the site plan.

Although the emphasis in VQ campus planning is to create a residential neighborhood atmosphere, somewhat separated from surrounding base administrative and mission related functions, proximity and access to common public use facilities is desired. The design of vehicular paths, pedestrian paths and landscape can help define layers of boundary around the lodging facility campus to provide this separation, but can also enhance the flow into and out of the adjacent community areas, such as the dry cleaners, post office, dining establishments, theatre, fitness center, enlisted dining facility, and clubs.

Adjacent recreational spaces additionally enhance these layers of boundary and can buffer other non-desired areas or functions. Site planning and community planning will define an edge to the VQ campus, while considering the importance of adjacent community and common public areas. Reference *AFPAM 32-1010 Land Use Planning* for additional useful information and guidance on this subject.

Develop a sense of order, arrival, orientation and community in planning the site. To the extent

possible, lodging structures must not be overwhelming in apparent size. Site lodging facilities in relationship to one another to create outdoor spaces for use as passive or active recreation areas. Overall room requirements and available acreage will establish the number of stories of a new VQ facility. Any configuration needs to ensure an efficient use of available real estate, but may require additional fire protection, structural, and life safety costs associated with buildings over three stories in height. Locate industrial areas and spaces such as loading docks, mechanical rooms, electrical rooms, trash dumpsters, HVAC equipment toward the rear of the facility or otherwise away from the guest view.

Building placement and design should also take advantage of views that are scenic, pleasant, or interesting. Designers must be sensitive to the approaches to the facility and strive to create a clear sense of arrival for newcomers.

3-1.1.2 Climatic Considerations. VQ design and building orientation must take advantage of local climatic conditions. Where practical, use passive solar construction techniques to reduce energy consumption. Local climate conditions must be considered as well as other site organization issues such as the creation of outdoor space, building scale or orientation to other facilities, when determining the best project site.

Site facilities should take advantage of the positive features of the site. Provide protection from undesirable winds and glare. Incorporate shading from excessive sun in warm climates. Solar gain and prevailing winds can enhance energy conservation and yield significant cost savings. Design roof overhangs to work with sun angles to provide solar shading. Achieve mutual shading by sensitively arranging adjacent structures. Avoid excessive east or west-facing glass and design for maximum cross-ventilation where feasible.

3-1.2 Circulation

3-1.2.1 Vehicular Access. Provide guest access to lodging facilities from secondary (collector) streets to minimize the congestion associated with main arterial streets. Where possible, divide main entrances with landscaped traffic medians between entry and exit lanes. Because of the high volume of traffic using the entrances, the recommended minimum width of non-divided entry roads will be 7.3m (24'-0"). Provide covered passenger loading and/or drop off (porte cochere) areas at the main lobby entrance.

Plan vehicular layout to eliminate, or at least minimize, the adverse impact of noise and headlights shining into guest room windows. Consider delivery truck access and required easements.

Follow local threat assessment and force protection criteria defined in *UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings* for all vehicle access design, critical in determining allowable set-backs, eliminating lines of approach perpendicular to the building. Consider snow dumping, especially in northern tier installations. Consider installing removable bollards as needed to restrict unauthorized vehicle access.

3-1.2.2 Emergency Service. Reference FC 3-600-01—*Fire Protection Engineering for Facilities* for a minimum separation required between lodging facilities and the closest adjacent building. This separation is for fire protection purposes but may also be dictated by force protection requirements and local fire protection policies. Provide access to fire protection vehicles from three sides. Obtain width, weight, and turning radii of fire fighting vehicles from the base fire department.

3-1.2.3 Service Vehicles. Access drives and parking areas will be designed to accommodate

service vehicles. Where interior court areas are proposed between adjoining lodging structures, consider designing the main pedestrian walks to accommodate such vehicles. When doing so, these walkways must be a minimum of 2.4m (8'-0") wide and must be constructed using reinforced concrete to accommodate medium weight vehicles. Consider treating the walkways with a patterned concrete system to minimize the negative visual impact of the wider access route. Consider materials such as concrete grass road type pavers to provide access for infrequent service vehicles.

Consider installing removable bollards as needed to restrict unauthorized vehicle access. Where possible, separate service entrances associated with mechanical rooms or mechanical enclosures from guest parking areas.

3-1.2.4 Bus Route Access. Where possible and appropriate, access to public transportation systems will be considered in project design. If the base provides bus service, designers will consider developing shelters and walks to serve guest needs. Bus shelters must be compatible with the architectural style of existing buildings and guidelines established by the base.

3-1.2.5 Pedestrian Access. Walkways to building entrances will be 2.4m (8'-0") wide. All other sidewalks will be 1.8m (6'-0") wide. Design and grade sidewalks to provide barrier-free access to the first floor of all lodging facilities and to any associated outdoor use areas. Provide connections to other functional areas of the base with pedestrian circulation systems. Consider including links to jogging/biking trails as part of the site development process. In northern tier locations, consider the use of sidewalks above steam heat tunnels to keep walkways free of ice in the winter, or consider heated or covered walks in lieu of open corridors.

3-1.3 Parking

3-1.3.1 Guest Parking. Provide .5 parking spaces per guest room, with 5% to be used as reserve parking for guest suites. Provide 1 parking space for all daytime lodging staff. Parking areas will be sized to local conditions and may be reduced. Additional visitor parking with the exception of accessible parking is not required, but may be an option based on local requirements.

3-1.3.2 Accessible Parking. Provide accessible parking spaces in accordance with the Uniform Federal Accessibility Standards and the Americans with Disabilities Act Accessibility Guidelines. Locate these parking spaces to provide the most convenient access to the building entry.

3-1.3.3 Motorcycle Parking. Designated motorcycle parking areas are not required based on infrequent use by lodging guests.

3-1.3.4 Bicycle Parking. Provide bicycle parking facilities within the lodging campus area as determined by the installation. Racks will comply with base architectural guidelines. Provide all bicycle parking on concrete surfaces adjacent to sidewalks or first floor building corridors. These areas must be covered and screened from view of the general public. Consider covered bicycle parking enclosed on a minimum of 3 sides in northern tier or highly corrosive environments. Consider lockable bicycle lockers, which maximize security and minimize visual clutter.

3-1.4 Site Considerations

3-1.4.1 Finished Floor Elevation. Establishing the ground-level finished floor elevation of VQ facilities is one of the more important aspects of site planning. The finished floor elevation affects grading, cut and fill, visual impact of the facility and interior-exterior transitions. In addition, the finished floor elevation has a significant impact on the landscape architect’s ability to

effectively introduce plant materials into the new environment.

When the approach is to level the site without sensitivity to other demands, the results in barren sites lacking visual interest. The landscape architect, architect, and civil engineer must work closely together to achieve optimal design results.

3-1.4.2 Grading. Grade the site to achieve an orderly transition from the point where guests enter the site by vehicle or on foot to the point where they are at the first floor entrance. Site grading must consider the impacts of the parking area, the lodging facility, bus-stop shelters, sidewalks, outdoor passive use areas, mechanical equipment, and trash dumpsters. Provide smooth transitions (no steps) at building entries. For renovation projects, make every effort to eliminate stairs to the facility. Where appropriate, use grading to control the negative visual impacts that these man-made facilities have on the visual environment. See the discussion of landforms below.

Lodging facilities tend to be linear and relatively narrow in configuration and therefore lend themselves to an orientation paralleling existing contours. Determine if local building codes require storm water retention. Where on-site storm water retention is required, the location of retention areas must be carefully thought out in terms of function as well as visual impact. Use large water retention sites for outdoor recreation areas.

3-1.4.3 Landforms. Use landforms to soften the impact of parking on the landscape and to positively enhance force protection of the lodging facility campus. Use landforms such as mounds and swales in conjunction with landscape plant materials to soften or obscure the parking areas, provide spatial articulation, or enhance drainage structures or surface water retention areas. Use landforms to add interest and diversity to the project. In particular, landforms can perform an important function around outdoor activity areas by screening undesirable views.

3-1.4.4 Storm Drainage. Depending on the geographic location and the availability of nearby subsurface storm drains, provide underground storm drainage for each lodging campus. All site water must either be intercepted in drop inlet structures or be designed to drop directly into a subsurface system. If subsurface storm drains are not available at the proposed site, include as part of the lodging facility project. As a minimum, divert surface water to an underground system to a point where it is discharged into above ground storm drains. Project funds will provide for appropriate surface water retention and erosion prevention, and will provide for drop inlets as necessary to intercept surface runoff and prevent walkways from being flooded. Refer to the USAF Landscape Design Guide for further guidance.

3-1.4.5 Utility Corridors. The site planner will develop underground utility corridors (easements) in coordination with the base community planner, electrical, mechanical, communication and civil engineers. Design corridors to accommodate future expansion. Place utility corridors no closer than one and one-half times the crown width of nearby mature trees or 10.7 meters (35 feet), whichever is greater. Locate utility corridors to allow for future street-tree plantings. Consider using pipe tunnels and trenches.

3-1.5 Site Amenities

3-1.5.1 Site Furniture. Well-planned site amenities and landscape development enhance the visual experience of a VQ campus and completes the lodging project. The importance of planning and programming this last part of the project is critical and should not be an afterthought. The selection of site furniture in addition to landscape and signage provides a finished appearance. Select and place site furniture that is in harmony with the architectural style of lodging facilities

complement the building, and makes the outdoor spaces more usable and organized.

The landscape architect must coordinate the selections with the architect and interior designer to ensure smooth transitions are made from within the building to the outdoors and vice versa. Effective transitions are achieved when building materials, colors, and design details from the building are incorporated into and reinforced by the paving materials, signage and site furnishings.

3-1.5.2 Site Lighting. Site lighting is an integral part of any lodging project. Provide lighting to ensure occupants have a means of safely moving between outdoor spaces. All signage and lighting must be in compliance with the installation's standards. The selection of materials and locations must be a joint decision between the landscape architect and the electrical engineer. Energy-efficient lamps such as high-pressure sodium with color correction ensuring optimum visual acuity are recommended for energy-conscious site lighting. Consider life-cycle costs of lamp replacement, though, when specifying fixture and lamp types.

Provide adequate site lighting at any point where there is a change in grade requiring steps, near accessible parking areas, under stairwells, and near main entrances to buildings. A lighted sign may be appropriate for night visitors. Use the recommendations of the *Illuminating Engineering Society North America Lighting Handbook* to establish illumination levels. In particular, do not exceed foot-candle level requirements as stated in the Recommended Practice Manual: Lighting for Exterior Environments. Design exterior lighting such that zero direct-beam illumination leaves the building site. Consider motion detection and photosensitive sensors to achieve energy efficient lighting design. Additionally, consider a solar collection system if the geographical location of the lodging facility can support the required solar levels required.

3-1.5.3 Outdoor Areas. Include outdoor passive and/or active use areas in all lodging campus plans. Where appropriate, design pavilions to become an integral part of the site. The pavilions must complement the architectural style and materials of the lodging. These features will include project-funded amenities such as walks, site lighting, landscaping, pavilions, and fencing if used to screen equipment or dumpsters enclosures only. Consider additional amenities such as barbecue grills, tables, and benches.

3-1.5.4 Sustainability. Incorporate sustainable design concepts into the lodging facility campus. Consider recycling centers and containers and other refuse issues when developing site design and landscaping. Coordinate locations of recycling and refuse containers with site furnishings and landscape to complement the campus and building design. Emphasize ease of use and service access to these containers.

3-1.5.5 Signage. Signage includes the primary exterior monumental sign. Required site signage, including parking and street signage, is a responsibility of the base and Major Command. All signage will be in accordance with the installation signage program and UFC 3-120-01, Air Force Sign Standards.

3-1.5.6 Fencing. Fencing may be necessary on the VQ site based upon location and surrounding facilities. Any fencing used as a screening material should be compatible with the lodging campus and surrounding architecture, comply with base standards, and will be accomplished with project funds. Fencing around the perimeter of the site, if desired, will be the responsibility of the installation or Major Command.

3-1.6 Landscape Architecture.

Landscape plans require the services of a professional landscape architect working in conjunction with the other disciplines to achieve the total design intent for the project. The landscape architect must have an intimate knowledge of the indigenous plant materials for the region. Refer to the *USAF Landscape Design Guide* for further guidance. In addition, the landscape architect must conform with DoD force protection guidance referencing maximum height and location of plant materials adjacent to a lodging facility.

Figure 3-2 Landscape

The design intent will include creating an aesthetically pleasing landscape minimizing resource and maintenance requirements. The landscape design report will include the following topics:

- Planning And Design Analysis
- Plant Selection Options
- Plant Installation
- Turf Alternatives
- Mulch Materials Alternatives
- Plant Zoning And Water Requirements
- Soil Improvements
- Irrigation Plan
- Maintenance Considerations.

3-1.6.1 Landscape Site Design. After performing a site analysis including visual elements, hydrology, security, climatic conditions, topography, maintenance, existing vegetation, spatial and program analysis, soil quality, and circulation patterns. Consider these landscape design techniques and principles:

- Enframement. Using landscape elements to focus attention on important features by manipulating and placing tree masses and screening undesirable features.

- Visual Separation –Separating multiple buildings into framed units and arranging shrubs and small trees around a building to soften structural lines.
- Spatial Articulation. Using plant materials to create outdoor enclosed spaces, to separate spaces one from another, and to direct people through outdoor spaces by visually defining and reinforcing patterns of movement.
- Visual Screening or Enhancement. Using landscape elements to screen unattractive views of objects such as trash dumpster areas, pad mounted electrical transformers, parking areas, and mechanical.
- Wind Control. Using landscape elements to control, slow, guide, deflect, or filter the prevailing winds.
- Sun Control. Using landscape elements around buildings, walkways, and parking areas to intercept direct and reflected radiation from buildings and parking.

3-1.6.2 Landscape Maintenance. Include landscape establishment and maintenance within the initial contract for installation of plant materials. The duration of the establishment period must be for a period of one year as part of the construction contract. The establishment period requirements will include irrigation, mowing and edging, mulch replacement, inspection/control of pests and weed control, tightening staking/guying materials, pruning, fertilization, and maintaining watering saucers.

3-1.6.3 Landscape Irrigation. Landscape with indigenous materials and plants to minimize irrigation needs. Consider irrigation systems in lodging facility projects sited in arid and semi-arid climatic regions. Use bubbler or drip irrigation systems adjacent to building facades to minimize impact of over spray. Provide all irrigation systems with solid-state automatic multi-station controllers, state-of-the-art control valves, and backflow preventers in accordance with building codes.

In cold climates, locate backflow preventers in the mechanical room. Where freezing is not a problem, locate backflow preventers within screened mechanical enclosures. Include adjusting turf spray coverage, duration of watering cycles, repairing leaks, and general maintenance to ensure proper functioning during the maintenance period for all irrigation systems. Water conservation is a high-priority factor in development of the irrigation design. Take advantage of non-potable water if possible.

3-2 BUILDING DESIGN.

Building design for VQ shall address needs for comfort while incorporating functional building systems. Comprehensive interior design is critical component, ensuring appropriate finish, material, and furnishing selections. The goal is to provide a cohesive lodging campus reflecting a quality appearance, appropriately sited within the existing community, fulfilling functional and operational requirements, and addressing guest's needs.

3-2.1 Codes and Standards

3-2.1.1 Force Protection. Follow *UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings and UFC 4-010-10, DoD Minimum Standoff Distances for Buildings (FOUO)* for guidance on all lodging construction. Refer also to *AFI 10-245, Air Force Antiterrorism Standards* and the *USAF Force Protection Design Guide* for additional guidance. Coordinate force protection counter-measure standards throughout the design process

while recognizing goals for aesthetics and compatibility.

3-2.1.2 Sustainability. Sustainability is defined as the responsible stewardship of our natural, human, and financial resources through a practical and balanced approach. Sustainability requires changes to the facility delivery process to ensure the "best fit" of the built environment to the natural and cultural environment. Sustainability integrates "green" or environmentally responsible practices into the process from the very beginning. Sustainable practices are an investment in the future. Through conservation, improved maintainability, recycling, reduction, reuse and other actions and innovations, we can meet today's needs without compromising the ability of future generations to meet their own. Incorporating sustainable design concepts requires the following actions:

- Expanding our focus to include life cycle costs along with first costs
- Extending the life of facilities
- Changing the facility delivery process to minimize waste
- Removing individual discipline focus and working as a team

This subject is addressed in detail in the *USAF Sustainable Facilities Guide*. Additionally, the Air Force has developed a *Leadership in Energy and Environmental Design Application Guide* for Lodging, referenced in the *USAF Sustainable Facilities Guide*, which gives specific guidance for lodging facilities. Use of this guide is required on all lodging facility projects.

3-2.1.3 Accessibility. Lodging will be designed to be accessible to and usable by persons with disabilities. New construction, as well as renovations to existing facilities, must be designed and constructed to meet accessibility standards, including 5% of all guest rooms and access to and use of all guest support areas and service areas. The specific requirements for providing access and accommodating the special needs of persons with disabilities are published in the *Uniform Federal Accessibility Standards,* the *Americans with Disabilities Act Accessibility Guidelines, and host nation standards*. In case of conflicting guidance, the stricter guidance will be followed.

3-2.2 Attics/Basements.

Attic access is required and will be fire protected if required by applicable code. Storage capability in attic areas and basement construction will not be provided.

3-2.3 Architecture

3-2.3.1 Mass and Scale. Large lodging facilities often have a greater mass than many buildings on a base. Modulate the form and facade of these buildings with setbacks, repetitive details, and less dominant colors to soften their physical appearance and blend them in terms of form, proportion, and perceived size. Combine size, shape, proportion, repetition, and placement of design features such as fenestrations, roofs, and columns, etc., to project the architectural character and mass of a building. When planning the project, consider the possibility of future renovations or additions to minimize extensive changes.

Lodging facilities must provide a commercial hospitality environment with an architectural scale that imparts a clear sense of relative comfort, ease, and satisfaction. Architectural scale is defined as the comparative relationship of a structure or space to the human form to possess a human scale. Use relative proportions, height, form and volume of the building or space and its formal relationship to other buildings or spaces to achieve this sense of scale.

3-2.3.2 Architectural Compatibility. Despite it's massive size, a lodging facility's architectural character must be in context with its surroundings. Architectural character is typically defined in the base and/or MAJCOM architectural compatibility standards available at most installations.

Figure 3-3 Architecture—Aviano Air Base

3-2.3.3 Exterior Finish Materials. Select reliable, conventional building systems for lodging facilities, and use building materials and finishes that are durable and easy to maintain. Select architectural systems based on their aesthetics, simplicity, economic characteristics, and compliance with installation architectural guidelines. Consider the benefits and limitations of brick, split face concrete block, and exterior insulation finish systems; they have been used successfully as primary exterior wall finishes.

Consider the recycled content requirements for affirmative procurement of products included in the Environmental Protection Agency list of guideline items such as insulation, cement and concrete, latex paint, patio blocks, and structural fiberboard.

3-2.3.4 Windows.

- All living areas and places of assembly as a minimum, shall have fixed windows.
- Use tight-fitting, insulated, commercial-grade windows. Light-duty residential grade windows are not acceptable.
- Windows and glazing will meet force protection construction standards minimum requirements. Consider low emissive (Low E) double pane glazing for increased thermal performance, ultraviolet retardation, and maximum light transmission. Consider specifying Energy Star labeled windows for energy conservation. Qualifying products are listed on the Energy Star website.
- Size windows nominally between 10 and 15 % of the floor area they serve.
- Increase window size and area to maximum allowable to increase the emission of natural light into guest rooms.
- Select windows that are compatible with the type of window coverings to be used, and will allow ease of maintenance.
- Provide solid surface windowsills at all windows.

3-2.3.5 Exterior Doors.

- All public area entrance doors will meet force protection and accessibility construction standards minimum requirements and will be a minimum of 910mm (3 feet) in width.
- Main entrance doors will be sensor operated.
- Designated exit doors must be equipped with operable panic hardware. Alarms that are annunciated at the front desk and can be activated at any specified time will be installed on all remote exit doors.
- Doors will be fully weather-stripped, include a heavy-duty metal threshold and minimum1/2" grade change to prevent drafts, dirt, water, and insect entry, and must be thermally insulated.
- Provide insulated overhead coiling doors into supply areas, if located adjacent to exterior service areas.
- Exterior entrance service doors will be hollow metal with hollow metal frames.
- All doors require doorstops and wall-mounted bumpers will be used where possible. Provide blocking in walls as required.

3-2.3.6 Roofing. Unless the installation's architectural compatibility standards state otherwise, all lodging facilities will have sloped standing-seam metal roofs.

Avoid concealed gutters on standing seam metal roofs because of problems with water shedding. Avoid the use of interior gutters to eliminate potential leakage. Consider ice and snow hazards when locating sloped roofs over building entrances. Avoid tapered roof insulation to achieve slope. Coordinate exterior locations of dryer vents and bath exhausts to minimize roof penetrations and lessen the visual impact on exterior elevations.

3-2.3.7 Building Signage. Building signage must provide clear directional and informational assistance. Mechanical, electrical and/or utility room doors must have identifying signage to match other building signage.

3-4 INTERIOR DESIGN.

The interior design of VQ facilities encompasses functional area requirements, relationships, and interior materials and finishes. Several basic lodging functions must be addressed during the design phase of any lodging project. Designers must fully understand the relationships between these interactive functions and take a holistic approach to creating a fully integrated facility.

- Residential. Guest rooms are residential. Activities include sleeping, resting and relaxation (television viewing, reading, etc), personal hygiene and grooming, personal cooking (microwave), and personal study.
- Guest Support. Guest support activities include reception, vending, laundry, retail sales, administration, guest business activities, secure luggage storage, small-scale food & beverage, and meeting/conference activities.
- Services. Service activities allow the facilities to operate efficiently and include back-of-house and guest support services. Back-of-house activities include utility services, maintenance, staff functions, housekeeping, , bulk storage, linen storage, supply storage, delivery and refuse removal.

3-4.1 Interior Design Considerations

The interior design and architectural design of the facility must be integral, related, and in context with characteristics of the built environment of the local region. The interior design also has a direct impact on the quality of life for the guests.

Figure 3-4 Interior Design—Osan Air Base

3-4.1.1 Interior Design Services. Engage the services of a professional Interior Designer working in conjunction with the other disciplines to achieve the total design intent for the project. All VQ design projects must include a Comprehensive Interior Design package (that includes A-E developed Structural Interior Design) for coordination and implementation. See the USAF Interior Design Guide for further information on interior package requirements. The base, with Headquarters Air Force Services Agency or Major Command assistance, will make the decision on the scheme appropriate for each project using Air Force Inns' standard design packages as the core providing detail variances to give each property a "unique" feel.

3-4.1.1.1 A budget is established for all FF&E. Interior designers must be diligent in staying within the budgeted amount for the entire furnishings package; includes lobby, lounge, administration, staff lounges, guest rooms, corridors, and back-of-house areas. In addition, interior designers must refrain from one-of-a-kind or custom-made furnishing and lighting. In some instances, custom-*sized* case goods are required due to architectural constraints affecting the room layout; no special approval is required in these cases. When specifying FF&E, interior designers must not specify high-cost items that could be construed as "gold-plating"; that is to say items usually found in high-end or luxury hotels, resorts, boutique hotels, etc. Example - leather covered seating, gold finishes, crystal chandeliers, are not appropriate. As a general rule, specify FF&E that do not exceed a ***moderate*** price range. The Air Force Nonappropriated Fund Procurement Office (AFNAFPO) is the central purchasing activity for all FF&E for centrally funded NAF construction projects. All FF&E purchases will be procured using AFNAFPO. AFNAFPO also maintains a list of vendors under contract who have provided special pricing for goods and services using Nonappropriated Fund Purchasing Agreements (NPA). NPA prices represent the maximum allowed amount for all FF&E purchases. Interior designers should contact AFNAFPO for pricing of interior furnishings (casegoods, lighting, seating, window coverings, amenities (artificial plants, etc.) when developing FF&E cost estimates. For centrally funded NAF construction projects, the AF Services Agency authorizes purchases, change orders, etc. Failure on the part of the base

project office, designers, or other project personnel to gain spending authorization in writing may result in the base or MAJCOM having to pay for the unauthorized expense.

3-4.1.2 Color and Materials Selection. Select neutral colors for surfaces that will have a long life, such as ceramic tile, laminates, solid surface counters, etc., to facilitate future finish material upgrades. Provide a pleasing color scheme in durable finish materials. Use color in non-permanent finishes to add interest and vitality, but do not allow color to dominate the interior environment. Coordinate materials, finishes, color, and texture selection to complement the overall building design and image. Fabric colors used are not required to be identical throughout, but will be color coordinated within each space. Additional recommendations on interior design standards and criteria, is available in the USAF Interior Design Guide. Comply with base and Major Command interior standards and guidance.

3-4.1.3 Interior Finishes. When selecting interior finishes, consider the recycled content requirements for affirmative procurement of products included in Environmental Protection Agency list of guideline items. Federal agencies must purchase products made with recycled materials unless these products do not meet technical requirements, are more expensive than comparable virgin material products, are not available competitively from two or more sources, or are not available in a timely manner. The items in this list related to interior design include carpet and cushion, latex paint, floor tiles, and shower and restroom dividers. This list changes as the Environmental Protection Agency adds new items every other year. The complete list of guideline items and their recycled content requirements is found on the *Environmental Protection Agency website.* Additionally, designers are encouraged to work with product manufacturers for other available products.

Table 3-1 Recommended Finish Schedule

Guest Services	Floor	Wall	Ceiling	Level of Use
Guest Rooms (See Chapter 4)				
Porte Cochere (See Chapter 5)				
Entrance / Vestibule	PT, T	P, WC	P	H
Lobby	CP, CPT, PT	P, WC	P	H
Reception	CP, CPT, PT	P, WC	P	H
Concierge	CP, CPT, PT	P, WC	P	H
Food Service	Area)	PT, T	P	H
Retail	CP, CPT, PT	P	P	H
ATM & Automated Registration	CP, CPT, PT	P, WC	P	H
Public Toilets & Conveniences	CT, PT	P, CT, PT	P	H
Conference	CP, CPT	P, WC	ACT, P	M
Guest Corridors & Circulation	CP, CPT, PT	P, WC	P	H
Business Center	CP, CPT	P	ACT, P	M
Laundry	PT, CT	P	P	H
Vending/Ice	PT, CT	P	P	H

Administration Services	**Floor**	**Wall**	**Ceiling**	**Level of Use**
Training Office	CP, CPT	P	ACT, P	M
Luggage Storage	SC, PT	P	ACT, P	H
Lodging Communications	CP, CPT	P	ACT, P	M
Administrative Areas	CP, CPT	P	ACT, P	M
Training	CP, CPT	P, WC	ACT, P	M
Restrooms	CT, PT	P, CT	P	H
Storage	SC	P	P	H

Floor Support	**Floor**	**Wall**	**Ceiling**	**Level of Use**
Janitors closet	SC	P	P	H
Housekeeping Areas	SC	P	P	H
Utility Rooms	SC	P	P	H

Back-of-House Support	**Floor**	**Wall**	**Ceiling**	**Level of Use**
Janitor Areas	SC	P	P	H
Housekeeping Areas	SC	P	P	H
Linen Storage	SC	P	P	H
Receiving Storage	SC	P	P	H
Supply Areas	SC	P	P	H
Utility Rooms	SC	P	P	H
Employee Areas	CT (at food prep & eating area), CP, CPT	P	P	H
Grounds Storage	SC	P	P	H
Maintenance Room	SC	P	P	H
Service Circulation	PT, T	P	P	H

Legend:

Floors	**Walls**	**Level of Use**
CP- Carpet	CT- Ceramic Tile	H- High/Extreme
CPT- Carpet Tile	P- Painted Drywall or Plaster	M- Normal/Above Average
CT- Ceramic Tile	WC- Wall Covering	L- Light Use
SC- Stained/Sealed Concrete	**Ceiling**	
PT- Porcelain Paver Tile	ACT- Suspended Acoustical Tile	
T- Terrazzo	P- Painted Drywall or Plaster	

3-4.1.4 Interior Materials and Finishes

3-4.1.4.1 Carpet. For the latest guidance on carpet, reference *ETL 03-3, Air Force Carpet Standards,* and the *USAF Interior Design Guide*. Carpet with a small pattern, a tweed or random design is required for its appearance retention and durability. Consider new products with additional wear-ability and maintenance abilities, and consider recyclable goods.

Guest room areas have a heavy wear classification for carpet. Carpet tile is not acceptable for use in guest rooms. A commercial grade solution-dyed level loop carpet with either a factory attached rubber slab cushion or a separate heavy-duty commercial carpet cushion is recommended for these areas. A cut pile/plush may be acceptable for the suites only based on light level of use. Provide a painted or stained wood base in guest rooms and suites. Public areas have a severe wear classification. A commercial grade solution dyed level loop carpet with a factory attached rubber slab cushion or carpet tile is recommended for these areas. A separate heavy-duty commercial carpet cushion may not be used. Provide a painted wood base in common areas.

Use severe-wear carpet with a texture on stairs to prevent slipping when wet or when subjected to the elements if hard surface flooring is not appropriate. Develop carpet “islands” with center pattern

designs surrounded by carpet borders running perpendicular to the walls to shorten a long corridor. Consider transitions between carpet and tiled areas. Butt carpet seams as possible in lieu of providing additional transition materials. Provide appropriate thresholds at guest room entrances.

3-4.1.4.2 Hard Surface Flooring. Use tile with sealed or epoxy grout in bath/vanity areas, hospitality areas, laundry areas, vending areas, food service areas, break areas, lobby areas, corridors and stairs. Stone or terrazzo is the preferred flooring in high traffic areas. Ceramic tile and porcelain paver tiles are good alternatives based on location and use. Provide tile base to match flooring. Grout will be sealed immediately following installation and use of epoxy grout will be considered in heavy traffic areas. Grout color will be neutral and medium tone to match color of tile. Avoid white as a predominant color. Vinyl flooring is not acceptable.

Provide an appropriate recessed walk-off flooring material at the main entrance vestibule. Consider recycled rubber tire walk off tiles or other similar products.

3-4.1.4.3 Walls. The use of natural materials such as stone on the interior can provide a durable finish and provide warmth and texture to the space and will be considered as part of the entrance/lobby area design. When walls are painted, a washable, non-glossy product such as eggshell enamel must be used. Consider the use of the a guide such as the *Master Painter's Institute* assist with the level of sheen desired, while maintaining the performance qualities of an eggshell enamel paint product. Bathrooms, laundry area, vending areas, doors and trim work, and services areas will receive a semi-gloss enamel finish. Consider the use of a Venetian plaster finish in common areas and guest rooms, providing a durable coating, rich in texture and easy to maintain. Accent colors will be used primarily in textiles such as draperies and upholstery fabrics and not in wall colors or materials. Do not use vinyl wall covering in guest rooms.

The use of vinyl wall covering on exterior masonry walls is not recommended. In the case of a renovation, ensure that the wall is properly designed to avoid moisture problems such as mold and mildew. Provide furring strips with a gypsum wallboard finish if CMU construction is used for exterior walls or interior partitions.

Provide transparent, vinyl corner guards on all exposed wall corners of guest room, suites, and common areas, 1200mm (4'-0") high from the top of base, to match the interior design package. All corridors, conference areas, business centers, and administrative areas will have an integral chair rail, mounted appropriately based on use of the space, with matching 150mm (6") high wood baseboards. Provide blocking in walls throughout for all wall mounted accessories, including doorstops, bathroom accessories, accessibility requirements, bulletin boards, cue racks, etc. Recess all wall-mounted accessories other than the light fixtures, such as fire extinguisher cabinets. Interior walls of elevator cabs will be solid surfacing or equivalent in lieu of standard carpet finish.

3-4.1.4.4 Ceilings. All ceilings will be gypsum wallboard painted white with eggshell enamel paint and a medium sand texture. Lay-in acoustical tile ceiling systems with exposed suspended grid systems will be specified for use in administrative areas, business centers, and conference areas only, as they tend to convey a nonresidential quality and are easily damaged. Avoid heavily textured acoustical treatments, including a sprayed popcorn ceiling application, which is difficult to patch.

Coordinate ceiling treatment with lighting selections. Consider varying ceiling heights and combination task and ambient lighting packages, especially in corridors and large areas, such as lobbies and conference rooms, to create interest. Emphasize natural light as much as possible. Consider the use of painted wood crown molding throughout primary guest supports and in guest

suites.

3-4.1.4.5 Doors. Interior guest room and suite entrance doors will be self-closing, solid core wood, decorative face, ½ hour rated in fully sprinkled facilities, conform to accessible standards and minimum 900mm (3'-0") width. These doors will be equipped with one 180-degree one-way viewers (two viewers will be provided in accessible units), permanently locked doorknobs, deadbolts and electronic keyless swipe card (match base system) locksets. If an electronic locking system is not already in use at other lodging facilities, provide a complete system, including the lodging reception desk. Assure that the statement of work for the locking system software selected for installation will interface with the Lodging Touch System (LTS) Property Management System. All doors within the facility will operate from this same locking system including doors accessing utility and service functions. Mixed lock types are not acceptable. A mechanical cipher lock for doors into cash rooms/financial areas is the only exception.

Sliding glass mirrored closet doors may be provided in bedrooms. Specify a header track and floor track mounted directly to the floor, and will be full height for easier access to shelving above rod. Opening hardware for closet doors will be integral with the frame in lieu of separate thin-profile hardware. Do not use hollow core wood doors, bi-fold doors, or pocket doors in lodging construction. Doorstops will be provided for all doors and wall-mounted bumpers provided where possible. Consider width of interior door frames to allow frames to cleanly receive vinyl wall covering here applicable. Provide wide-angle peepholes and deadbolts on all entrance doors.

All interior door hardware throughout lodging facilities will be lever style. Interior corridor separation doors will be solid core wood, ½ hour rated in fully sprinkled facilities, minimum pair of 900mm (3'-0") doors, minimum 1800mm (6'-0") opening, with magnetic holding devices and glass vision panels, size and construction as permitted by applicable code. Service area doors will be solid core wood with hollow metal frames. Areas required to have vision panels in doors include guest laundry, lounges, retail areas, business centers, administration areas, break rooms, meeting rooms, luggage storage, reservations, and all other public spaces not mentioned. Vision panels will assure guest safety. If possible, provide single hardware assembly for door closure and hold open operation.

3-4.1.4.6 Cabinets and Millwork. Built-in cabinets must be well constructed with sturdy hardware and meet the requirements of the *Kitchen Cabinet Manufacturer's Association* standards. Particleboard may not be used. Cabinet faces will be solid wood and use a raised panel surface. All case goods and hardware will be coordinated with the Comprehensive Interior Design package for the project to ensure matching woods, stains, and finishes as best possible. Routed tips will be provided on cabinets in lieu of pulls, with appropriate pulls provided on cabinets in accessible areas. In all cases, concealed hinges will be provided. Finishes must be able to withstand frequent cleaning and must coordinate with the other finish materials. Neutral colors are required for cabinets and millwork to facilitate future color scheme changes. Use a non-porous solid surfacing material for countertops and back splashes based on durability and ease of maintenance. Provide a back splash in the hospitality areas of the suites, the food service areas located within the guest supports, and in the food preparation area of staff lounges..

3-4.1.4.7 Bathrooms. Use 200mm x 200mm (8"x8") or 300mm x 300mm (12"x12") slip resistant porcelain paver tiles in bathrooms/vanity areas with matching base. Specify a mottled or shaded tile to hide discoloration from detergents, etc. Use non-porous solid surfacing material from floor to ceiling around bathtubs and showers. Grout will be sealed immediately following

installation and use of epoxy grout will be considered in heavy traffic areas. The grout color will be neutral and medium tone to match the color of the tile for ease of maintenance and good appearance retention. Other areas may be covered to wainscot height as possible. Use a non-porous solid surfacing material for countertops and back splashes based on durability and ease of maintenance. Provide blocking in walls throughout for all wall mounted accessories, including doorstops, bathroom accessories, shower rods, and accessibility requirements. Vanity sinks will be under-mount porcelain on steel.

3-4.1.4.8 Window Treatment. Draperies (and solar shades in hot climates) will be installed in all VQ guest room windows. In addition, solar shades may be used in guest support and back-of-the house applications. Vertical blinds and horizontal blinds will not be used in lodging facilities. Consider solar conditions with the use of solar shades as applicable and depending on installation location.

The drapery lining will hang independently from the finished drapery treatment and will have a blackout lining or use a blackout fabric where required at overseas locations and bases where flight crews require rest during daylight hours. For ease of cleaning, stack-pleated, roll-pleated or accordion-type pleated drapes will be used in lieu of pinch-pleated drapery treatment. Traverse rods will be commercial quality. All window treatments must pass *NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*. Fabrics for draperies and bedspreads will be inherently flame-retardant, with the only approved exception allowing for the fiberfill content in bedspreads. Bedspreads must complement the window treatments and carpet color, but need not match exactly since bedspreads are laundered more frequently. Provide blocking in walls to support furniture specified in the Comprehensive Interior Design package and to support the installation of sheer and blackout draperies and rods, extending 300mm (12") past each window jamb.

3-4.1.4.9 Furniture Considerations. Coordinate with the Comprehensive Interior Design package during the design process. All furniture is specified and separately funded by Headquarters Air Force Services Agency. All case goods and hardware will be coordinated with the Structural Interior Design package for the project to ensure matching woods, stains, and finishes as best possible. Furniture arrangement will not block window openings to allow the maximum amount of natural light into the guest room. Consider the placement of the thermostat controls in reference to furniture and artwork locations. Provide blocking for all wall or ceiling mounted equipment and furnishings. Selection of materials and finishes for the main lobby area will consider heavy use.

3-4.1.4.10 Signage, Artwork and Accessories. Provide artwork for all public areas. Headquarters Air Force Services Agency will provide an artwork and accessory allowance for each VQ project to include common areas and individual guest rooms. Coordinate with the installation, Major Command, and Headquarters Air Force Services Agency, with final approval by Headquarters Air Force Services Agency. Graphics presentation and content must be well designed, coordinated with the architecture and interior design packages, and compatible with the local geographical culture. All artwork shall be hung with security hangers. Silk plants are authorized for common areas.

Figure 3-5 Lobby Area—Osan Air Base

Interior signage will be in accordance with the installation sign standards, accessibility requirements defined in the *Uniform Federal Accessibility Standards* and the *Americans with Disabilities Act Accessibility Guidelines*, and *UFC 3-120-01, Air Force Sign Standard*. All interior signage will be funded as part of the VQ project. Provide clearly visible unit room names and/or numbers for all guest support areas including main entrance signage and direction signage, service areas, and individual guest rooms and suites. Coordinate directional signage and individual guest room numbering schemes with the local lodging manager and base communications. Consider odd numbers on one side of the hallway and even numbers on the opposite side.

Figure 3-6 Unit Room Numbers

With the exception of emergency pull boxes, all speakers, electrical panel covers and access panel covers exposed to interior rooms, thermostat controls, fire extinguisher cabinets, hose boxes, electrical boxes, plumbing chase covers, etc. will have a factory finish to match the color of surrounding walls or ceiling as specified in the Structural Interior Design package. Standard factory finish colors may not be acceptable.

3-4.1.4.11 Equipment Considerations. The schedule and sizes provided below are based on industry standards and will be used as a design basis. Consider and coordinate the use and location of recycling centers throughout the common areas to compliment the interior design while supporting sustainability guidance.

- The construction contractor or design-build contractor is responsible for buying/ordering, receiving, handling, storage, and installation of all CF/CI items as required. Provide separate

costs for all CF/CI items.

- All appliance colors should be coordinated with the FF&E. The construction contractor or design/build contractor will submit cut/datasheets of proposed equivalents/substitutions appliances for review/approval.
- Purchase appliances meeting Energy Star program standards and specifications as included in this guide. Qualifying products are listed on the *Energy Star website*.

3-5 BUILDING SYSTEMS

3-5.1 Structural.

Select an economical structural system based on force protection requirements, facility size, projected load requirements, subsoil conditions, local availability of materials and labor, feasibility of prefabrication, local construction practices, and resistance to fire, and wind, snow, seismic, geologic, and permafrost conditions. Decisions concerning the structural system have substantial impact on construction costs. Coordinate column spacing and layout with the floor plan to ensure column placement within or in alignment with walls. Minimize columns awkwardly placed within guest rooms or living areas, and limit placement to larger public spaces.

Force Protection requirements applicable to the structural design of lodging facilities include those found in *UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings*. These standards require the design of the structural support system to minimize progressive collapse, attaching all interior ceiling; electrical, and mechanical components to the building structure, and using annealed laminated glass on windows and doors. Buildings three or more stories tall (including ground floor) shall be designed for progressive collapse.

Analyze the proposed structural system to determine if it is the “best value” method to realize the architectural design intent. Larger projects such as a new VQ campus design or fast track design-build projects will consider new alternative construction methods and materials. Based on the required expertise needed to apply new construction methods, these systems are not recommended for smaller lodging projects.

Roof systems and supporting structure will consider life cycle costs as well as long-term durability and ease of maintenance. Concrete tile roofing systems and metal roofing systems are recommended for typical lodging construction. Reference the *International Building Code* for design load criteria.

3-5.2 Acoustics.

Careful attention to acoustic design is essential for lodging facilities to ensure a high degree of privacy for guests within their rooms and study areas. Walls between guest rooms, between guest rooms and living areas, between guest rooms and corridors, between guest rooms on a floor level above or below, exterior walls of guest rooms, mechanical rooms and systems, elevators and stairs, service areas, employee areas, laundry and vending areas, supply areas, and externally-generated sound such as aircraft and automobile noise must have a Sound Transmission Class (STC) of 55. Floor and ceiling assemblies must have a Sound Transmission Class of at least 55 and an Impact Insulation Class of at least 60. Telephone, cable television, convenience outlets, and mechanical ducts must not compromise the acoustical integrity of wall, floor, or ceiling assemblies. Where fluorescent lamps are used, specify fluorescent lamp ballasts with a sound level rating ‘A’. The high noise levels generated by jet aircraft, as well as normal acoustical concerns, must be addressed early

in the design stage. Proper acoustical design depends on a careful ratio of reflective to absorbent surfaces so that excessive reverberation and disturbing sound intensity levels can be eliminated. The type of space and functions will determine the adequate sound control.

3-5.3 Mechanical Systems.

Mechanical and utility systems will comply with the *UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings*: locate air intakes on roofs or above first story, and restrict access to intakes; control access to facility roofs; install emergency shutoff switches for HVAC systems; avoid positioning redundant utilities in the same location or chase; and provide secured access to all supporting facilities and infrastructure systems. Coordinate location of dryer, kitchen, and bath exhaust vents on exterior of the VQ facility and away from windows. Exposed ductwork, conduit, etc., is not allowed.

3-5.3.1 System Design. The design of the HVAC system must comply with the criteria set forth in *MIL-HDBK-1190, Facility Planning and Design Guide (Sept. 1987), Chapter 10, Air Conditioning, Dehumidification, Evaporative Cooling, Heating, Mechanical Ventilation, and Refrigeration*. The following is provided in addition to, and in cases of conflict takes precedence over, the above guidance. In humid areas special design and construction considerations are required. These considerations are not limited to HVAC systems. Humid area criteria is defined in *ETL 03-2, Design Criteria for Prevention of Mold and Mildew in Air Force Facilities in Humid Climates.*

3-5.3.2 System Selection. The selection of the HVAC system is to be based upon the lowest total life cycle costs: include initial costs, operating costs, energy costs, system maintenance and repair costs, and component replacement costs, if not expected to achieve the same life cycle of the systems under considerations. The HVAC system must be designed to ensure that building energy consumption does not exceed Department of Defense energy budget figures. Use of a central plant will be considered for VQ campuses. A central plant with heating and cooling equipment reduces maintenance and capitalizes on the higher efficiency of larger capacity commercial equipment. Ground-mounted and through-the-wall AC systems may also be considered, as appropriate.

Consider the use of renewable energy technologies as part of the selection of the HVAC system or as a supplemental energy source. Reference *ETL 94-4 Energy Usage Criteria for Facilities in the Military Construction Program* for further guidance. The use of ground source heat pumps is encouraged if economically feasible. If used, soil reports prepared during the design process will include borings to the depth necessary to consider the use of a ground source heat pump. Benefits include energy conservation and reduced maintenance. Energy Management Control Systems (EMCS) are effective energy savings systems and highly encouraged. A cost-benefit analysis must be performed to forecast life cycle costs versus projected energy savings of the life of the system before a final determination to install is made. Consider the requirement and/or selection of DDC controls or other types of EMCS systems with base civil engineering personnel.

Supply air will be ducted to the sleeping rooms. Branch ducts will be equipped with balancing dampers. Avoid placing ductwork over the shower area- ceiling space will not be used as return air plenums. Consider ductwork locations utilizing soffit areas in closets. Determine the amount of transfer/return air sound attenuation between the guest rooms and adjacent areas.

HVAC systems will be standardized with electronic thermostat regulating temperature controls. Individual climate control must be provided and located within each guest room, and within both

the bedroom and living area in the case of suites. Coordinate the location of thermostats with location of furniture and artwork throughout the building hallway.

3-5.3.3 Maintenance. Maintainability of the system is critical to the continued quality of life of the occupants. Design access to the system to minimize disruption or inconvenience to VQ residents and maximize servicing efficiency. The mechanical systems must comply with *ETL 01-1, Reliability and Maintainability (R&M) Design Checklist*. Locate HVAC units above the ceiling to ensure that filters, controls, drain pans, and condensate piping, control valves and coils are easily accessible for servicing and cleaning. Condensate piping must be equipped with traps and threaded clean-outs at the unit. Design drawings must detail these features including minimum clearances for maintenance and required force protection setback distances as outlines in *UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings*. In the selection of chilled water systems, the design of HVAC enclosures must take into account the space needed for chillers to receive air to cool condenser coils and room for service. The enclosure design will also consider screening that will prevent large amounts of pollen and vegetation from clogging condenser coils, enclosure placement on the site, and compatibility with surrounding architecture and exterior design elements.

3-5.3.4 Ventilation. Provide a central ventilation system to supply conditioned outside air to each room or suite HVAC unit. Equip all branch ducts with accessible volume control dampers. Each guest room will be supplied continuously with conditioned outside air to meet the current ASHRAE Standard 62 or as required for building pressurization, whichever is larger. If provided to each room's HVAC unit, the room's HVAC unit's fan must run continuously. Operable windows are not permitted in view of the foregoing (Reference Engineering Technical Letter (ETL) 03-2: Design Criteria for Prevention of Mold in Air Force Facilities

3-5.3.5 Bathroom Exhaust. Bathrooms may be equipped with a central exhaust system or individual, directly vented, and switched exhaust fans. System selection will be based upon a life cycle cost analysis. If a central ducted bathroom exhaust system is utilized, the exhaust system will run continuously and be interlocked with the building supply air system, include a manual volume damper accessible from the space for proper balancing, and include an evaluation for utilizing heat recovery from the exhaust system to precondition ventilation air. Consider alternative systems that balance cost, maintainability and control.

3-5.3.6 Room HVAC Systems. When guest rooms are equipped with individual HVAC systems, these systems will be ducted vertical fan units placed within designated mechanical closets or mechanical rooms equipped with lockable doors. Individual HVAC systems will not be used as the primary HVAC system to condition outside air in humid climates and must be carefully designed or avoided in humid areas to avoid mold and mildew.

3-5.3.7 Piping System. Where centralized hot and chilled water utilized, individual HVAC systems will be connected to a centralized mechanical system by a 4-pipe hot water and chilled water distribution system to provide positive space control.

3-5.3.8 Perimeter Fin Tube Heating. In areas such as overseas or as applicable per local code where perimeter fin tube heating is utilized, provide temperature control for each zone.

3-5.3.9 Laundry Areas. Dryer venting must be well designed, especially with the inclusion of laundry units per module, to prevent lint clogs and significant maintenance issues. Design straight-run venting of dryers to avoid lint clogs. Dryer venting must be exhausted away from windows and exterior balcony areas.

3-5.4 Plumbing.

Reference the *Uniform Plumbing Code* for plumbing requirements. Provide domestic hot and cold water, sanitary and storm drainage, propane or natural gas, steam or hot water, and/or chilled water as required. Refer to section 3-1.6.8 for landscape irrigation requirements. Provide metering for water per building and as per Air Force requirements

Provide hot and cold water to all public toilets, bathrooms, sinks, janitor closets, drinking fountains and laundry rooms. Provide floor drains in all toilets, bathrooms, janitor closets, and laundry rooms. Provide shut-off valves at all fixtures. Tank type, low water volume toilets are required in all bathrooms. Provide elongated bowl toilets with a closed-front seat and a lid. Toilets and bath fixtures must match and be neutral in color. All bathroom plumbing fixtures exposed (pipes, faucets, etc.) must be first-line chrome-plated brass, manufactured by nationally known manufacturers. All tubs and lavatories must have pop-up type waste stoppers. Rubber stoppers are not permitted. Tub/shower valves must be pressure balanced anti-scald type. Locate faucet, showerhead and controls on interior wall to allow for placement of plumbing access panel. Provide filtered water lines for break area refrigerators with automatic icemakers.

In public toilets, provide sensor-activated faucets, toilets and urinals. Drinking fountains will be located on each floor of public areas of each lodging facility, and will meet accessibility requirements and Uniform Plumbing Code requirements for number, size and height. Hose bibbs will be provided on all exterior walls of each building at 30.5m (100'-0") intervals; freeze proof as dictated by climatic conditions.

Plumbing systems will be designed to take advantage of stacking bathrooms and common wet walls for efficiency. Mechanical engineers, architects and structural engineers must work together to carefully plan the size and location of plumbing chases with minimal impact on usable living space. Consider collocating plumbing chases with exhaust risers serving each guest room. Exposed plumbing pipes are not permitted. The procedures described in the most current edition of the Uniform Plumbing Code will be used in determining water supply and waste line sizes.

3-5.4.1 Hot Water Systems. Central hot water domestic systems (gas if possible) will be specified for all projects to reduce costs and provide better service for guests. The Uniform Plumbing Code will be used in determining the size of the hot water generator, and based on requirements, size will allow showering in individual guest rooms, with ten-minute recovery, as per applicable codes.

The domestic hot water system must have a circulating pump or other approved system installed in-line to provide instant hot water at tap. Provide protection from hot water surges. In the design of central hot water systems, verify that the draw-off requirements for the domestic hot water service will be determined in accordance with the method recommended in the Uniform Plumbing Code. The minimum requirements are to allow for simultaneous use of 100% of the showers discharging (maintaining a pressure of 15psi at the showerhead). Hot water will be stored and circulated at a temperature greater than 60°C (140°F) but less than 65°C (149°F). Minimum hot water storage will be sized to maintain flow under 100% shower discharge for a five-minute period (capacity will vary based on number of rooms). The heat exchangers within the calorifier will be capable of raising the contents from 10°C (50°F) to 65°C (149°F) in one hour. The temperature of the hot water as it leaves the hot water storage calorifier will be 60°C (140°F).

3-5.5 Energy Performance.

Sustainable energy efficient performance in lodging facilities cannot be achieved solely by individual building systems, but must be supplemented by other design factors as well. Reference *ETL 94-4 Energy Usage Criteria for Facilities in the Military Construction Program* for further guidance. Design factors such as mechanical systems and management controls selection, thermal insulation characteristics, building orientation, solar shading, landscape, electrical system design, occupancy sensor devices, and appliance selection will be considered.

There are many other factors designers must consider, but they will keep in mind the importance of life cycle cost analysis for lodging facilities. The Air Force keeps its facilities for a longer period of time than most buildings in the private sector. Therefore, considerable attention will be given to energy-efficient design in the initial planning process. Efficient energy management policies require consideration of whole building design that relies on renewable energy sources. Recent federal policy requires the use of Energy Star and other energy efficient products when acquiring energy-using products. Reference the *Energy Star website* for additional guidance. When Energy Star labeled products are not available, select products in the upper 25% efficiency.

3-5.6 Electrical/Communications.

The electrical design of a VQ project will be based on maximum guest room hotel occupancy. The design will include electrical distribution equipment, data fax ports, intrusion detection systems, cable television, fire detection and enunciation, emergency lighting, interior and exterior lighting, receptacles and grounding, and electric, telephone, and local area network wiring. Provide individual circuits per room. Provide surge protection on service entrances, distribution panels, sub panels, selected feeders, and sensitive load circuits. Provide metering for electric power per building and as per Air Force requirements. When Rickenbackers is included, provide separate metering.

Based on *UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings*, provide a Mass Notification system in all facilities in project funding. This requirement will be integrated into the lodging facility communication system. Coordinate with base security forces for guidance and additional requirements. Speakers will be 100mm (4") diameter, recessed, and factory finished to match color of wall or ceiling as specified in the Structural Interior Design package.

The following standards apply to the planning, design, and construction phase of new VQ construction and renovation to existing facilities and systems. These standards will also serve as a checklist for reviewing drawings and specifications for electrical design of VQ projects. Floor plans must show the location of all electrical equipment, items, devices, controls, and loads. Construction drawings must include one line for all electrical equipment (transformers, switching gear, panels, loads, etc) including schedules for all panels, circuits, and loads. Consideration to daily operation and maintenance will be emphasized. This list will not be considered complete or all-inclusive, but rather a starting place. Improved concepts and additions will be added as well as “lessons learned.” Cross-exchange of new, improved, more efficient data is encouraged to increase the electrical group knowledge and processes as well as to further minimize life-cycle costs for lodging facilities. Ensure that 110v, 60hz duplex outlets are provided in rooms in overseas locations, in addition to any differing local standard (i.e., such as the 220/230v, 50hz European standard).

3-5.6.1 Communications

3-5.6.1.1 General Requirements. Design and install telecommunications distribution and cabling systems in accordance with *ETL 01-12, Communications and Information System*

Criteria for Air Force Facilities, pre-wiring in accordance with *AFI 33-133, Joint Technical Architecture—Air Force (JTA-AF)*, and recommendations contained in the JTA-*AF Fixed Base Technical Architecture*, Vol. 6, *Building 1040 Wiring Architecture* (contact *HQ AFCESA* for specific design criteria.) Systems will be designed and installed only by qualified telecommunications personnel. Provide RJ-11 telephone jacks wired in accordance with TIA/EIA 570 *Residential Communications Standard* with CAT 6 cable and as authorized in *AFI 33-111, Telephone Systems Management*.

Project FF&E funds are used to provide telephone handsets and other peripheral equipment devices to interface with the lodging telephone system. Telelphone equipment requirements in excess of the foregoing are a major command/base funding responsibility. Consider the installation of cable modem infrastructure. All designs will consider the latest technology available, but actual requirements will vary per location. Due to wide variances, this guide will only suggest the installation of conduit for future communication systems. The use of cable trays is encouraged. Provide cable outlets in accordance with *AFI 64-101, Cable Television Systems on Air Force Bases*.

Provide outlets for phones and access to the installation LAN for both network computers and printers in the administration, reception area, and conference room only, in accordance with *AFI 33-111, Telephone Management Systems* and *AFI 33-115, Vol. I, Network Management*. Locate outlets adjacent to electrical outlets in a manner that maximizes the flexibility of furniture placement. Locate telephone jacks or provide additional jacks for maximum flexibility. Locate adjacent to electrical receptacles. Allow for easy, future upgrades to data and communications cables and allow for fiber optic cables for communications

3-5.6.1.2 Specific Requirements

3-5.6.1.2.1 Guest Support/Service Areas

- Install wall mounted house telephones and public pay telephones adjacent to lobby areas as required per installation. House telephones will connect to the front desk only. Provide a recessed and less visually prominent location
- Provide a cable connection in the break room for a wall mounted television adjacent to a duplex outlet location
    - Drop Cable - From the J-Box above the ceiling a RJ6 cable shall be terminated to Video Taps (VT) located above the hall ceiling.
    - Feeder Cable - Shall be run from VT to VT above the hall ceiling to each VT and terminate in the CATV Closets on each wing.
    - A video amp will be located in each of the CATV Closets to boost the signal and a Feed Cable shall be run to each amp in each CATV Closet and above the first floor ceiling back to Lodging Comm. Room.
    - Contractor shall run a Trunk Cable from Lodging Comm. Room to Main Communications Room and from Main Communications Room to point of service.
    - Cable TV service shall be provided by others.
    - All Video of Demand (VoD) equipment will be located in Lodging Communications Room. All VoD equipment, software, and service are by other; Contractor shall provide

isolated Quadplex (4 outlets) for power.

3-5.6.1.2.2 Guest Rooms and Suites

- In all standard guest rooms, provide RJ-11 telephone jacks with CAT 6 cable—Two RJ-11 jacks in a single outlet (one labeled “phone” and the other “data port”) on the dresser wall adjacent to the quadraplex electrical receptacle and cable television outlet, and two RJ-11 jacks in a single outlet as above on the wall adjacent to the bed and electrical receptacle. The location of a duplex outlet and cable TV outlet will allow for the installation and mounting of a television either from a wall or ceiling bracket.
- In all suites, provide RJ-11 telephone jacks with CAT 6 cable in the living area—two RJ-11 jacks in a single outlet (one labeled “phone” and the other “data port”) at the counter adjacent to the quadraplex electrical receptacle, two RJ-11 jacks in a single outlet as above on the sofa wall adjacent to the electrical receptacle. Additionally, provide RJ-11 telephone jacks as specified above for standard guest rooms in all bedroom areas. Provide an additional cable television outlet adjacent to a duplex outlet within the living area.

3-5.6.2 Power Supply. Design the power supply to provide 99 percent load availability. Consider dual power supply for each facility, from separate substations, if possible, to increase availability/reliability for these loads. At CONUS and other appropriate locations, provide standard 60 hertz frequency for all possible loads. At overseas locations, comply with local code requirements and provide 220v/230v duplex power outlets, in addition to 110v. Electric or gas is acceptable for appliances based on local requirements. Allow for 230v, 208v and gas dryer connections.

3-5.6.2.1 Specific Guest Rooms and Suites Requirements. Provide flexibility in furniture placement with locations of outlets and switching, and locate outlets as required to service appliances including disposals, washer/dryer, refrigerator, under cabinet lighting, televisions, clock radios, coffee makers, and microwaves. All electrical outlets, cable outlets, phone outlets, and light switches will be mounted per applicable code. Through-the-wall duplex electrical outlets between guest rooms and suites will not be used. Provide convenience outlets each 7.6m (25'-0") on center in interior corridors. All exterior outlets will be waterproofed and ground fault interruption (GFI) protected.

Locate electrical panels in a discreet, safe location. Panels will not be located within individual guest rooms. Provide utility access doors as required. Provide access panels to all interior utility connections discreetly to minimize maintenance workers having to cut or otherwise deface finish surfaces. Conceal all wiring; exposed wire mold or conduit will not be used.

- In all bedroom areas, provide 2 duplex outlets on the head wall of the bedroom, 2 duplex outlets on the dresser wall adjacent to the television cable outlet, and 2 duplex outlets on the window wall, mounting height per code.
- In living areas of all suites, provide a minimum of 2 duplex outlets on sofa wall, 1 duplex outlet at the window, 2 duplex outlets adjacent to the television cable outlet, and 1 quadraplex outlet at the counter mounted above standard desk height of 736mm (29")
- Provide duplex convenience outlets (GFI) both sides of mirror in all bath areas, as per applicable code, and to satisfy guest requirements with a minimum of 4 locations. Size circuits to accommodate 1600-watt hair dryers, etc. Confirm whether bathroom outlets are permissible

in overseas locations.

- Provide a ceiling mounted exhaust fan on a timed switch with a range of 1 – 10 minutes in all bath areas (when a central exhaust system is not specified)—coordinate location of switch.

3-5.6.3 Lighting

3-5.6.3.1 General Considerations. Lodging facilities have historically suffered from poor lighting levels, thus designers must provide a much higher quality light source, light level and fixture selection to enhance new VQ spaces and their use. The designer must be cognizant of lighting for both day and night situations, and will emphasize the use of natural light in combination with incandescent or fluorescent lamps to provide a comfortable lighting level. Consider the use of a certified lighting consult, and, and provide the highest quality illumination within budget and life cycle cost limitations.

Figure 3-7 Lighting—Osan Air Base

Coordinate lighting selections with ceiling treatments and consider combinations of recessed lighting, light coves, indirect lighting and soffit lighting as alternatives. Coordinate ductwork and lighting locations to use soffit areas as possible. Provide blocking in walls throughout for all wall-mounted accessories including wall mounted lighting fixtures. Limit the types of lamps necessary to simplify inventory. Halogen lamps and compact fluorescent lighting are good alternatives over traditional lighting systems based on long term energy efficiencies, improved luminance, and long lamp life spans. Halogen lamps blend well with traditional incandescent lamps and produce residential warmth to a space. Compact fluorescent fixtures can retrofit standard fixtures and provide a long lamp life. These advantages balance higher initial costs, and will be considered for new VQ construction. Specify interior lighting that meets Energy Star program standards. Qualifying products are listed on the *Energy Star website*. Consider solar-powered exterior luminaries when they meet lighting requirements and are cost effective.

Use the latest edition of the *National Electrical Code*, the *IES Lighting Handbook*, and *NFPA 101 Life Safety Code* for lighting calculations, or host nation code as applicable. The minimum requirements for each respective area will be as follows:

Table 3-2. Lighting Requirements

Location	Lux (ft. candle) Level	Multiple Switching	Dimming Requirement	Incandescent Bulbs	Fluorescent Bulbs
Lodging Rooms					
• One fixture on each side of bed(s)	538 (50fc)	No	No	Ambient	Ambient
• Overall ambient light level at desk height	1076 (100fc)	No	No	Ambient	
• At table/desk and counter surface	538 (50fc)	No	No	Ambient	
• Dresser area	323 (30fc)	No	No	Ambient	
• Bathroom area at the floor line of the tub/toilet	215 (20fc)	No	No	Ambient	
• Bathroom area at surface of the vanity	538 (50fc)	No	No	Ambient	
Corridors	215 (20)	Yes	No	Ambient	Accent
Lobby	320 (30)	Yes	No	Ambient	Accent (option)
Reception: Task Ambient	755 (70) 540 (50)	No	No	Either Ambient	Either No
Offices	540 (50)	Yes	No	Ambient	—
Conference Room	540 (50)	Yes	Yes	Ambient	—
Toilets	320 (30)	No	No	Either	
Storage	320 (30)	No	No	Either	
Mech./ Elect. Rooms	215 (20)	No	No	—	Ambient
Exterior Walkways, Drives, Parking	54 (5)	No	No	—	—
General Outdoors	5.4 (0.5)	Automatic w/ manual override	No	—	—

3-5.6.2.2 Specific Requirements for Guest Support/Service Areas

- Provide recessed lighting with dimmer switches as a primary lighting source throughout—additionally consider specific locations that will illuminate and enhance elevator entrances, directories, artwork, and other items of interest
- Consider wall washers if corridors are narrow, visually pushing the wall outward. Sconces may be used in public areas and corridors, and may be used adjacent to guest room entrances to illuminate room numbers
- Provide occupancy sensor lighting controls for administration areas, employee lounge and bath areas, linen and storage areas, and supply areas. Limit surface mounted ceiling lights and fluorescent tube lighting to utility areas such as mechanical rooms and closets
- Provide exterior lighting of parking areas, building entrances, and walkways

3-5.6.2.3 Specific Requirements Guest Rooms and Suites

- Provide overall ambient and task lighting in each guest room and suite.
- Electrical cords must not exceed 1.83m (6 feet)
- Incandescent fixtures with dimmer switches are recommended for the living/bedroom area. Consider recessed down lights and indirect lighting.
- Fixtures must not appear “institutional”. Do not rely solely on table lamps or ceiling fan light kits for adequate ambient lighting. Provide control to the table lamps in the living room by an individual wall switch located adjacent to the guest room entrance door. Wall sconces will not be used in guest rooms and suites. Consider the use of occupancy sensor lighting control devices in the guest room and bath areas as appropriate.
- Provide recessed lighting or pendant lighting over suite counter areas, recessed lighting over guest room desk areas, and recessed lighting as general path lighting through rooms including entrances, washer/dryer areas in suites, and halls. Provide ceiling hugger ceiling fans with integral low profile light kits in living and bedroom areas, located in the center of ceilings. Fans and lights will be on individual rheostats to control speed and lighting levels. Location of sprinkler heads and down lights such that neither is located within 300mm (12') of the sweep of the fan blades.
- Provide backlit wide rocker light switches in guest rooms, bedrooms, and bathrooms to serve as night-lights. This requirement is made for safety reasons to aid people who are likely unfamiliar with the room layout. Provide an automatic light switch integral to the operation of the closet doors.
- Provide recessed ambient lighting for the bath area, and provide either recessed directional task lighting or wall mounted light fixtures at the vanity area, balanced above the counter and adjacent to the mirror.
- Provide an independently switched recessed ceiling mounted combination resistance heat-light fixture. Provide an integrated night light in the light fixture. Provide a 15 – 20 minute heater timer switch. Provide sufficient ambient light in the bath including proper illumination within the shower area—locate all switches together within the bath area.

3-5.7 Corrosion Protection.

Conformance with Air Force and NACE standards for corrosion control on all Air Force lodging projects is required. This includes material selection—non-metal or no dissimilar metals, cathodic protection for all underground metal systems, protective coatings for above ground structures and underground metal, and industrial water treatment. Include corrosion protection for electrical components in humid/salt air environments. Consider nitrogen purge or refrigeration type dehumidification protection systems depending on size and capacity.

3-5.8 Fire Protection.

In accordance with *UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings*, fire protection systems for lodging facilities must include seismic detailing. Fire protection systems must conform to *MIL-HDBK-1008, Fire Protection for Facilities Engineering, Design and Construction*, and to *National Fire Protection Association* fire codes.

3-5.8.1 Fire Resistance. Facilities will be of Type II, noncombustible construction as defined by the *International Building Code (IBC)*. Requirements for the fire resistance of walls, ceiling and floor assemblies will be in accordance with the IBC. In addition, minimum fire separation between egress paths, hazard areas, and exits will comply with the *Life Safety Code, NFPA 101*. Construction of such assemblies must be closely coordinated with the sound attenuating techniques used. Exits such as stair enclosures will be separated by not less than 1-hour fire resistive construction. Hazard areas including boiler and fuel fired heater rooms, bulk laundries, and self service laundries greater than 9.3m^2 (100sf), maintenance shops and trash collection rooms will be separated by not less than 1-hour fire resistive construction. Note there is no minimum fire separation between modules or within modules in a fully sprinkled facility.

3-5.8.2 Fire Suppression. All new VQ new construction and major lodging renovation projects must be protected throughout by an approved supervised automatic sprinkler system installed in accordance with the requirements specified in *NFPA 13, Installation of Sprinkler Systems, or 13R, Sprinkler Systems in Residential Occupancies Up To and Including Four Stories in Height*, as appropriate and other fire codes referenced therein. Sprinkler water supplies for systems designed in accordance with NFPA 13 will comply with *MIL-HDBK-1008, Fire Protection for Facilities Engineering, Design and Construction*. Ensure adequate space is included in the mechanical room for the sprinkler riser or, if no mechanical room is in the project, a sprinkler riser closet with adequate space to service the riser. Fire sprinkler heads will be recessed as standard design, with an exposed head with protective cage acceptable in utility or service locations.

Provisions for life safety must conform to the requirements found in the latest edition of *NFPA 101, Life Safety Code*. Travel distance to exits is of particular concern in designing VQ. The placement of stair towers or stairwells must be part of the preliminary building planning process. Minimizing the number of stairs required can be achieved by maximizing allowable travel distance in the design. This requires determining the maximum number of guest rooms that can be served by one stair while still conforming to the maximum allowable travel distance. The elimination of stairs must be tempered with the need for privacy.

3-5.8.3 Fire Detection. Fire detection/internal alarm and reporting system will conform to the latest edition of *NFPA 72 National Fire Alarm Code*. Each sleeping room and living room will be provided with an approved single station smoke/heat detector powered from the building electrical system. Smoke detectors will not be located in a direct airflow or closer than 1m (3'-0") from an air supply diffuser or return air opening. Where ceiling fans are installed, smoke detectors will be at least 1m (3'-0") from the tip of the ceiling fan blade, and the maximum area of coverage for a smoke detector will be reduced by 50%. Provide manual fire alarm pull stations on exterior of building adjacent to each unit as required by local fire code

All guest rooms will be clearly identified on an addressable panel, based on local requirements. Discreetly locate the fire alarm system annunciator panel while allowing easy access in emergencies. Ensure that audible notification devices are easily heard within the guest rooms, and allow all devices within each bedroom and living area to sound concurrently. This may require additional, louder, or individual (in each room) notification devices because of the sound attenuating construction found in lodging. NFPA 72 requires audible fire alarms to be 70 dBA measured at the pillow level. Fire alarm notification devices used within guest rooms will be the "private mode" type.

Provide a Class I standpipe system in stairwell enclosures of lodging facilities 4 stories or greater in height in accordance with *NFPA 14, Installation of Standpipe, Private Hydrants and Hose Systems*. Standpipes consist of a 63mm (2.5") outlet at the first floor and one 63mm (2.5") outlet to be located at each intermediate landing between floors to prevent congestion at doorways. Where there are multiple intermediate landings between floors, hose connections will be located at the landing approximately midway between floors. These outlets must have American National Fire Hose Connection Screw Threads (NH), also sometimes known by the abbreviations NST and NS. Used concealed sprinkler heads throughout.

Provide all accessible rooms or common areas with a visual alarm system and notification devices following accessibility guidance.

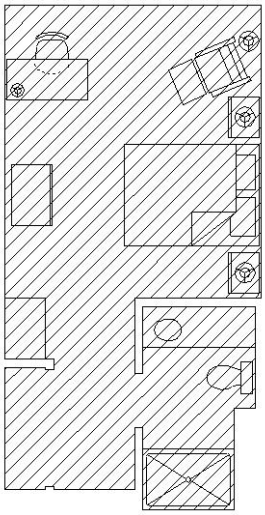
CHAPTER 4 -- GUEST ROOM AND SUITE DESIGN CRITERIA

This chapter provides criteria and technical guidance relevant to design for new or renovated Visiting Quarters rooms.

4-1 GUEST ROOM SIZE

Net Living Area is defined as the floor area of the living area, bedroom, bath, and hospitality area measured to the inside face of the room walls illustrated by the shaded areas. See Table 2-3 for net area allowances. Use the attached drawings that meet these area allowances for all new facilities.

Figure 4-1 Guest Room Net Living Area



Items included in Net Living Area calculations are:

- All door swings, built-in fixtures, built-in cabinets, that encroach upon the living/bedroom/bath areas
- Mechanical equipment that occurs within the living/bedroom/bath areas (HVAC units, radiators, and baseboard heaters)

Items excluded from Net Living Area calculations are:

- Items extending from floor to ceiling, which have been boxed-in and extend into the room from the wall plane (columns, pilasters, vertical pipes, mechanical chases, air ducts, etc.)
- Interior walls within the unit.

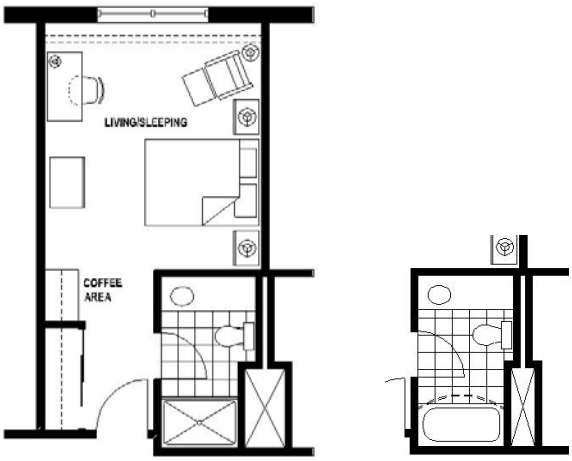
4-1.2 Designing for Surge Requirements.

At some installations, mission requirements may justify greater room capacity than that available in the standard room; e.g., surge or contingency requirements. Project validation studies (PVA) must substantiate the need for this added capacity requirement and recommend the increased room size. The Installation Commander must submit a waiver request for the increased room size to the major command for consideration. If approved, the major command forwards the waiver request to Headquarters, Air Force Services Agency for final consideration for approval.

4-2 STANDARD GUEST ROOM DESIGN

Detailed dimensions of all guest room types are defined in the attached drawings. Illustrations are provided in the Figures below. See Interior Design guidance for furnishings in paragraph 3-4.1.

Figure 4-2 Standard Guest Room Plan



(tub layout)

Figure 4-3 Guest Room—Osan Air Base

4-2.1 Living/Sleeping Areas

Provide a bed, nightstands, table lamps, a floor lamp, lounge chair, desk, office chair, television armoire, and a 635mm (25") television with either a separate or combination DVD/VCR player. Consider the size of this television when selecting armoire size and function. Ensure that the armoire doors are fully retractable (pocket doors).

4-2.2 Coffee Bar Area

Provide a 600 x 900 mm (24 x 36") coffee bar area including an under-counter refrigerator, a coffee maker, and a 700-watt countertop microwave oven. This counter shall be a solid surface material with a full height back splash. The cabinets above shall be solid plywood construction with hidden hinges, integral routed pulls, raised panel solid wood fronts with melamine interior and fixed shelving, stained and finished to match case goods as specified in the Comprehensive Interior Design package.

4-2.3 Guest Bath

Each guest room or suite will have a private bath with the following:

- Sink. Provide a solid surface vanity counter with under-counter mounted sink, and 4” back splash. This counter will be open below. Provide a solid-surface or wood front panel including a towel cubby (see attached plans for design dimensions).
- Faucets. Provide separate hot and cold lever water handles with an elongated neck spigot, washerless ceramic mixing valves, and anti-scald device at each lavatory. Provide matching faucet sets and bath accessories (except grab bars).
- Toilet. Provide a white, floor mount, tank type, elongated water saver-type toilet bowl with full seat and lid.
- Mirror. Provide a wood framed mirror above the vanity counter in all baths. See drawings for dimensions.
- Showers and Accessories. Provide a shower stall in guest room and suite baths. Provide a non-slip shower pan with an entry curb sloping to a floor drain. Provide a solid surface surround material, seamless, with a single recessed soap dish. Provide a showerhead with mounting hardware that allows height adjustment over a wide range and mixing valve. Consider heavy-duty hand-held showerheads connected to a flexible hose that fits into an adjustable-height holder mounted on a vertical rod. Provide a screw-in shower rod with curtain, mounted at 2m (6'-6") above finished floor to top of rod. Doors will not be provided. Provide a retractable clothes line. Provide all bathing stalls with grab bars reinforced to support an 113kg (250lb) minimum pull force. All grab bars will be standard coated stainless steel.
    - Tubs may be provided but must be fully justified and preferred by a majority in patron studies. Where tubs are justified, provide a cast iron bathtub, white, 1.5m (5'-0") with a non-slip surface. Provide a seamless, solid surface tub surround with a single recessed soap dish. Provide a screw-in curved shower rod with curtain above the tub, mounted at 2m (6'-6") above finished floor to top of rod. Tub grab bars will be incorporated as an integral component of the tub surround.
- Hair Dryer. Provide a wall-mounted hair dryer located adjacent to the vanity area. Insure towel bar and outlet placement will not interfere with dryer operation.
- Accessories. Provide toilet accessories to include one door-mounted robe hook, one 600mm (24") long towel bar located convenient to the vanity, and one 600mm (24") long towel bar located convenient to the shower/tub. See representative accessories in Appendix B.
- Trash Can. Allow space beside the toilet for a 7-liter (7.4 quart) minimum capacity plastic trash can.

4-2.4 Guest Room Closet

Closets must:

- Provide sliding closet doors
- Provide minimum uninterrupted interior dimensions of 600mm deep x 1800mm wide (2’-0” x 6’-0”) with a clothes rod and shelf above
- Provide a total minimum length of hanging space of 1.8m (6’-0”).

- Provide an additional clothes rod at 1.4m (4’-6”) above the floor for accessible guest rooms and suites.
- Provide ironing board/iron hangar inside closets.
- Provide adequate blocking for all wall-mounted accessories including an iron and ironing board in the closet.

Consider the following closet options:

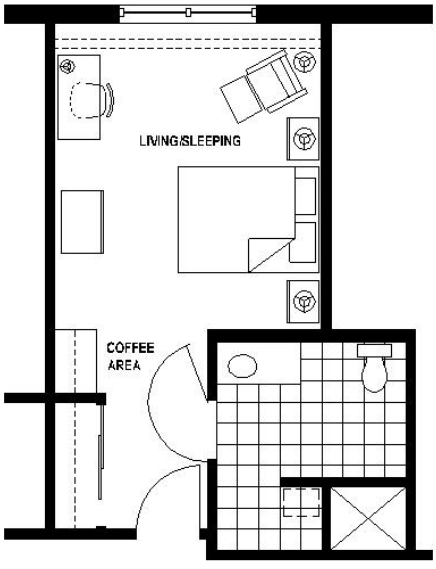
- Mirrored closet doors
- Where ceiling height allows, consider raising closet ceilings to maximize storage volume.

4-3 ACCESSIBLE GUEST ROOMS

Detailed dimensions of accessible guest rooms vary from Standard Guest Rooms and are defined in the attached drawings. Accessible Guest Room Bath features vary from Standard Guest Rooms as described below.

- Provide a solid surface vanity counter with under-counter mounted sink and back splash at the required height and depth.
- Insulate the pipes and maximize knee space as per code.
- Provide an accessible shower with a fold-down bench seat and adjustable height showerhead including a hand-held spray attachment.
- Provide grab bars as required adjacent to the toilet and shower with walls reinforce to support an 113kg (250lb) minimum pull force. Shower grab bars will be incorporated as an integral component of the shower surround.

Figure 4-4 Accessible Guest Room Plan

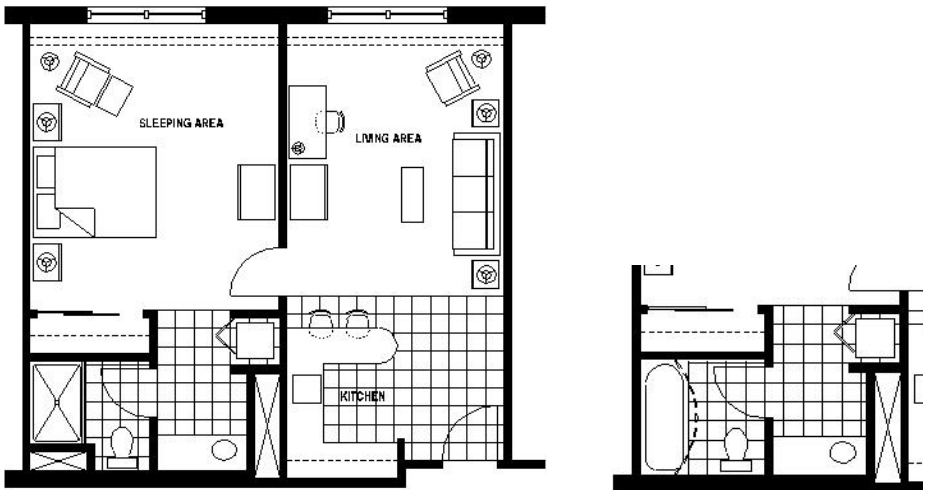


4-4 SUITES

Detailed dimensions of Suites vary from Standard Guest Rooms and are defined in the attached drawings. Suite features vary from Standard Guest Rooms as described below.

- Provide separated living and sleeping rooms.
- Suites will include a hospitality area for guests to prepare simple meals and will include a 0.34m3 (12cf) frost-free under-counter refrigerator with a separate freezer compartment, and a 700-watt microwave oven mounted beneath the upper cabinets above. Provide a stainless steel sink, 18 gage, brushed stainless steel, and satin finish, with a single-lever faucet.
- Provide a counter with legroom for bar stools and cabinetry beneath on the wall side of the hospitality area. The sink area, base cabinets, and counter space adjacent to the sink are dimensioned in the attached drawings.
- Provide integral fluorescent task lighting under wall cabinets . Provide solid surface counters with eased edges and integral 100mm (4") splashes.
- Provide a laundry area in all suites with a ventless washer/dryer combination to eliminate the requirement for a location adjacent to an exterior wall or special exhaust systems. Provide adequate air circulation around units and consider maintenance and potential heat build-up in the selection process. In new construction, the connection and the laundry equipment shall be contractor provided. In renovation projects, only the washer/dryer hook-up shall be contractor provided.
- Provide a 813mm (32") television with a separate combination DVD/VCR player in all suite living areas and a 635mm (25") television in all suite bedrooms.

Figure 4-5 Suite Plan



(Tub layout)

Figure 4-6 Suite Hospitality Area—Ramstein Air Base

Figure 4-7 Suite Hospitality Area—Osan Air Base

4-5 ACCESSIBLE SUITES

Except for the following, accessible suites will generally follow all standard and accessible guest room requirements while providing separate living and sleeping rooms. Suite dimensions are shown in attached drawings and illustrated below.

- Hospitality areas in accessible suites will have pull out shelving, open work areas, 864mm (2'-10") high countertops, and other requirements as necessary to comply with accessibility guidance.

Figure 4-8 Accessible Suite Plan

CHAPTER 5 -- GUEST & STAFF SUPPORT DESIGN CRITERIA

This chapter provides general considerations and technical guidance for planning and designing the building support functions. Specific information that expands on these overall principles must be developed for each individual project.

5-1 Guest Services

Public spaces for guest services are critical to the quality level of the guest visit. Specific public spaces vary by installation, and are included in Table 2-4 of this guide. A conceptual guest support activity plan is shown below.

Figure 5-1 Conceptual Guest Support Area Plan

5-1.1 Porte Cochere.

Provide covered passenger loading and/or drop off (porte cochere) areas at the main lobby entrance. Provide a connecting covered walkway leading to the main guest entry. Exterior covered spaces shall count as ½ scope.

5-1.2 Entrance and Lobby Areas

Provide a vestibule (airlock) at the entry point as required by the local climate. The entry sequence should greet customers with a view of the reception area, provide waiting space, and be convenient to the various guest services. A main lobby area may have adjacencies including administration, secured luggage storage, reception, self-service sales store, business center, concierge station, public toilets, and core circulation. The capacity of the lobby is recommended by the project validation study and through consultation with Headquarters Air Force Services Agency and the installation based on historical experience of the typical number of customers and guests anticipated to use this area. Consider providing access to persons with disabilities in all public spaces.

Figure 5-2 Lobby Area—Osan Air Base

Plan acoustics, lighting, and furnishings to create an environment conducive to the intended activity. The lobby must be located so as not to interfere with the conduct of business at the reception desk, but will be adjacent.

5-1.3 Reception Desk Area

Depending on the installations' current facilities and PVA recommendations, projects may, or may not, require reception for guest check-in/check-out, and administrative areas for the entire lodging management staff.

The design and layout of the front desk area is critical to the operation of the VQ facility. The design for this area must include outlet and jack locations for all communication equipment. The total equipment requirement must be fully coordinated with the electrical and communication design. The reception desk function will include a minimum of two (2) workstations with at least one workstation fully accessible [both for guests and employees]. Each workstation will include a computer system, cash drawer, storage drawer, key maker, and telephone provisions. Ensure the front desk area is secure; the entrance door to the area should be equipped with a key-operated, cipher, or an electronically controlled lock. The height of the countertop adjacent to each workstation must be raised to a level to screen the top of the workstation monitors from immediate view.

Figure 5-3 Reception Area—Osan Air Base

5-1.4 Concierge Station.

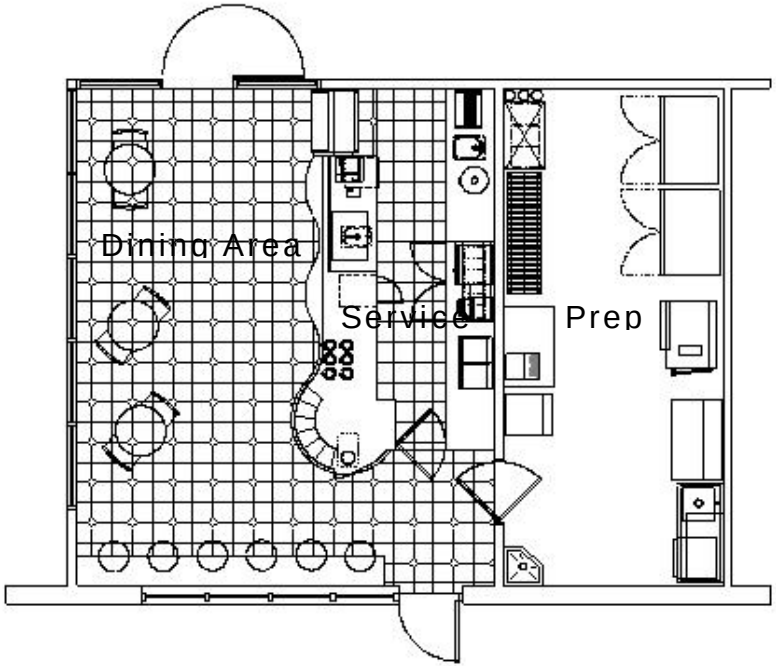
Provide an area for a concierge station as required per installation. This area will be used as a convenience for guests requiring staff assistance on local transportation, dining, and shopping arrangements. This space may also be used for reserve training weekend use to coordinate and organize troop check-in and departure.

5-1.5 Food Service

Based on demand, provide either a modular concession stand or a signature brand "Rickenbackers" coffee shop in all new main VQ construction. Size the seating capacity up to 20 and based on local market requirements. This area will follow standard plans (attached). Provide this area in the lobby area of the facility with appropriate utility connections.

Figure 5-4 Food Service

Figure 5-5 Rickenbackers's Plan



5-1.6 Retail Sales.

Retail sales outlets, when required, will provide convenience-type sundry sales. At a minimum, the sales area will have a single point of sale checkout including necessary electrical/ communication requirements, display shelving, determined by the quantity, variety and type of products sold. Determine the size and quantity of refrigeration equipment; locate the required floor drains, water sources, and utility requirements based on the intended store capability. Arrange the location of the retail sales function so reception desk attendants can operate it.

5-1.7 Automatic Teller Machine & Automated Registration.

Provide spaces for ATMs, interactive information machines near the elevator lobby. Automated registration machines should be located in view of the reception desk.

5-1.8 Public Toilets and Convenience Areas.

Provide toilet facilities for use by visitors and guests in conformance with the *Uniform Federal Accessibility Standards* and the *Americans with Disabilities Act Accessibility Guidelines*. Provide convenient access to these toilets from the lobby/entrance area. Provide separate men and women toilet facilities where higher use is anticipated. Provide an accessible lavatory and mirror in the accessible stall as possible.

Provide commercial grade toilet accessories in the visitor toilets. These include recessed paper towel dispenser/trash receptacles, toilet tissue holders, soap dispensers, sanitary napkin disposals, sanitary toilet seat cover dispensers, baby-changing stations, and required grab bars. When possible, provide baby changing stations in the accessible stalls for privacy with appropriate directional signage. Additionally, provide all-in-one type accessories to reduce space requirements.

Provide public phones and base Defense Switching Network (DSN) phones in alcoves adjacent to main entrances, either located together, near restrooms, or in separate locations based on local requirements. DSN phones are required adjacent to main entrances per force protection requirements.

Provide drinking fountains adjacent to multi-purpose spaces as required.

5-1.9 Conference Room.

A conference room seating up to 75-persons (recommended by the PVA) may be provided. Requirements include internet/LAN, phone, computer, dry erase capabilities, projection, video use, and computer-based training use.

5-1.10 Guest Corridors and Circulation.

Corridors in guest areas convey a strong visual statement and will enhance the character of a lodging facility. Designs will provide a transition from the exterior to the interior. Provide guest room access from interior corridors. Provide windows at the ends of interior, guest-room corridors or at corners and intersections as possible to maximize natural light within the space. Limit length of guest room corridors to no more than 16 rooms on one side of the corridor. The width of guest room corridors will be five (5) feet. Corridors will be wider at room entrances.

Guest room corridors should include ample ambient lighting, recessed alcoves, sconces, and small dropped soffit areas designed following carpet borders to enhance vertical features and provide balance. Provide easily read, appropriately scaled signage to assist with direction and well-placed artwork to create interest in the lobby and entrance areas.

Provide equivalent design attention to decorative (non-egress) stairways.

Figure 5-6 Circulation—Osan Air Base

5-1.9.1 Passenger Elevators. Passenger elevators are required for all buildings containing more than one story. Provide a non-porous solid surface interior wall finish to provide durability and ease of maintenance. Avoid combination freight and passenger elevators unless the size of the lodging facility does not merit separate elevators. Specify the elevator based on projected capacity and base standards. Consider a faster, traction type elevator for buildings above five floors, and ensure controls include an auto return to the first floor on all elevators. Size the elevator to accommodate accessibility requirements and emergency stretchers.

5-1.11 Business Center

Provide 3 – 4 workstations within an enclosed room, adjacent to the main lobby area, for use by guests as required. Fax and copy services will be included.

Figure 5-7 Business Center

5-1.12 Guest Laundry.

Provide a centralized laundry area or separate accessible laundry areas per guest room floor for

guest use. Provide space for one washer/dryer pair (including accessible washers/dryers) for every 12 guest rooms served. At training/extended-stay bases, provide space for one washer/dryer pair (including accessible washers/dryers) for every 8 guest rooms served. Include seating, folding areas, and service sinks within the laundry areas as required and in conformance with the *Uniform Federal Accessibility Standards* and the *Americans with Disabilities Act Accessibility Guidelines*. Isolate these rooms with regard to acoustics, humidity, ventilation, and temperature control form other guest areas. Include a minimum depth 457mm (18") built-in solid surface counter with eased edges for folding laundry adjacent to the laundry area, reinforced to support maximum wear and use.

Provide an area for detergent and supply vending machines. Provide a stainless steel deep service sink with a gooseneck faucet, located within the laundry area. Provide adequate seating adjacent to laundry area. Other laundry area considerations include concealing all utilities from view, yet providing easy access. Mount utility connections 900mm (36") above the floor. Design straight-run venting of dryers to avoid lint clogs. Provide a floor drain for each 6 washers but no less than 2 floor drains in each laundry room. Provide adequate wall-mounted box drains for the washers.

5-1.13 Vending/Ice Area.

Provide a separate vending area with ice dispensing machine on each floor adjacent to guest rooms. Provide space and utility connections for ice and vending machines, based on 136kg (300lbs) per 200 guests. Provide a floor drain and dedicated water service for each ice-dispensing machine. Provide space for vending machines as applicable.

5-2 ADMINISTRATION SERVICES

This area supports functions including housekeeping, separate clean and soiled linen storage, a maintenance room, employee lounge, storage areas, and supply storage rooms. Additionally, utility spaces are required including mechanical rooms, electrical and telephone closets, sprinkler control rooms and janitor closets. The design of this area will be flexible. Avoid service traffic through lobby and guest support areas.

5-2.1 Training Room.

A 25-seat lodging staff meeting/training room is required near the administration or back-of-house for use by staff. Requirements include internet/LAN, phone, computer, dry erase capabilities, projection, video use, and computer-based training use.

5-2.2 Luggage Storage Area.

Provide a separate, secure room for luggage storage. This room will be located adjacent to the front desk area or the concierge station and will be used as a convenience for guests requiring secured luggage storage prior to check-in if arriving early or after checkout if departing the installation late.

5-2.3 Lodging Communications.

This area should be designed as space for the Lodging Communications system and Server. Allow enough space to maintain and access the equipment. Locate this room adjacent to the administrative area to support the Lodging operations server, telecommunications, and equipment such as the Lodging operations network. Design this room for connection to outside data, cable television, and communications systems and as the primary distribution point for these systems throughout the building. Locate this room on the ground floor with easy access to installation maintenance personnel.

5-2.4 Administrative Areas.

Administrative areas may be provided in new VQ if they do not duplicate adequate spaces already provided on the installation. Locate the following administration rooms adjacent to the main lobby and reception desk area.

- Manager
- Asst Manager
- Executive Secretary
- Superintendent
- Clerical
- Accounting
- Counting Room. Adjacent to the reception desk for cash counting, accounting, and auditing.
- Reservations Office
- Training Office (if confirmed by PVA)
- Copy/Work Area

5-2.5 Storage Areas.

Provide secured areas for administrative supplies, lost & found, pilfer able, and other high-value items.

5-3 FLOOR SUPPORT

5-3.1 Janitor Areas.

Locate a janitorial area on each floor. Include a deep service elongated rectangular sink, a mop strip, a floor drain, room lighting, and wall-mounted shelves for storage of cleaning supplies.

5-3.2 Housekeeping Area.

Provide one housekeeping area on each floor or wing depending on facility size and configuration as a minimum to include a dishwasher, but not laundry appliances. Staffing levels are based on one housekeeper per 14 guest rooms.

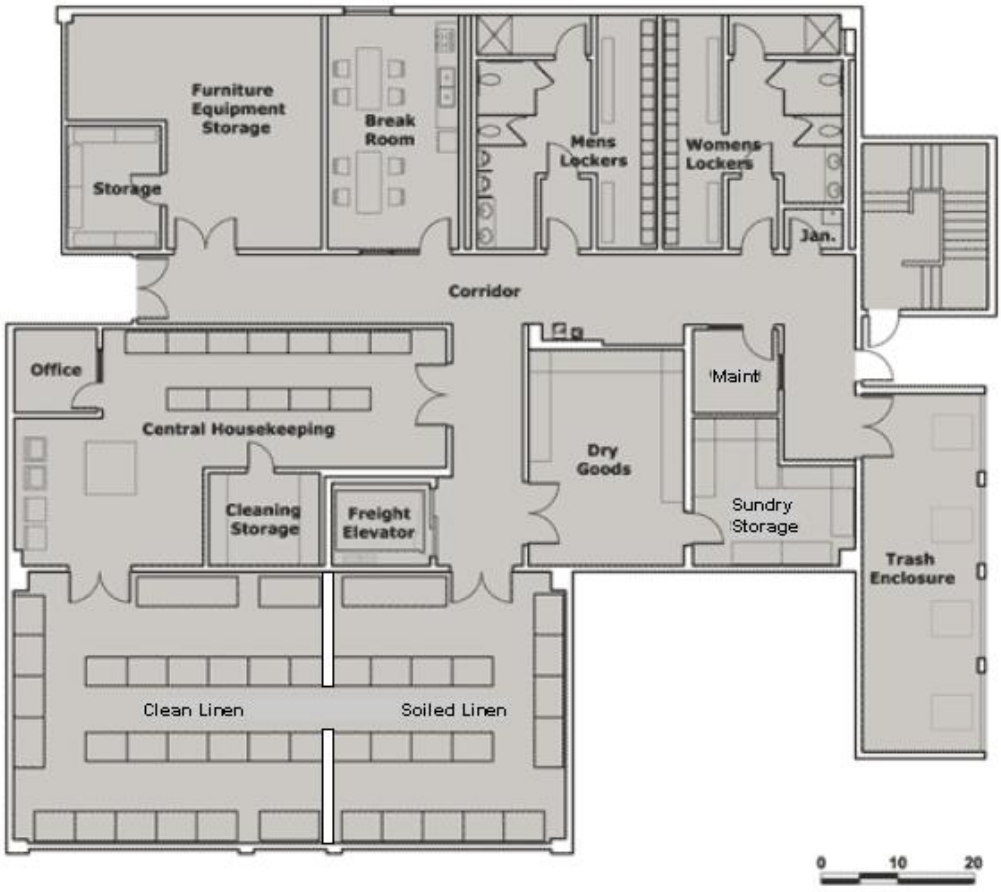
5-3.3 Utility Rooms.

Locate guest room floor mechanical rooms to control noise and vibration and allow for efficient utility distribution, generally best located adjacent to laundry facilities. Give special attention to the reduction of noise and vibration transfer. Electrical and communications (phone and data) rooms, as well as sprinkler control rooms, will be located as required throughout the VQ for efficient utility distribution. Plan access to mechanical, electrical, and communications rooms so that minimal disruption occurs when service is required. Restrict access to maintenance personnel. Provide exterior access where possible.

5-4 BACK-OF-HOUSE SUPPORT.

Staff support (or Back-of-House) areas will be provided in new VQ construction sized according to the required support staff. These spaces are typically found in each in each major VQ building or complex on an installation. Locate these areas near the service entry point on the ground floor.

Figure 5-8 Conceptual Back-of-House Staff Support Plan



5-4.1 Janitor Areas.

Locate a central janitor area to support floor janitor areas. Include a deep service elongated rectangular sink, a mop strip, a floor drain, room lighting, and wall-mounted shelves for storage of cleaning supplies.

5-4.2 Housekeeping Areas.

5-4.2.1 Housekeeping Manager. Provide an open Housekeeping Manager's space near linen storage areas.

5-4.2.2 Linen Storage. Provide shelving as required for clean linen storage. Separate soiled linen from clean linen storage areas. Specify heavy-duty shelving to support heavy linen loads. Include an area for housekeeping cart storage.

5-4.2.3 Receiving. Provide a receiving area, especially in larger facilities. Provide loading dock areas and overhead coil or swinging doors as appropriate for climate.

5-4.2.4 Supply Areas. Provide a general storage area to support food storage, dry goods storage and beverage storage as required per installation specific requirements. Provide shelving as required and consider the use of large cages in lieu of separate rooms to allow flexibility. Consider an additional storage area for furniture and equipment based on installation specific requirements.

Figure 5-9 Supply Storage

5-4.2.5 Supply Office. When confirmed by the PVA, locate this office adjacent to the Supply Room. It is intended to support administration and control of operational supplies.

5-4.3 Utility Rooms

5-4.3.1 Mechanical/Electrical Rooms. Design these rooms to accommodate the building central water heating, plumbing, heating, ventilation, air conditioning, fire suppression, power distribution, and energy control systems. Locate these rooms on the ground floor with easy access to installation maintenance personnel.

5-4.3.2 Communications Room. Design this room for connection to outside data, cable television, and communications systems and as the primary distribution point for these systems throughout the building. Locate these rooms on the ground floor with easy access to installation maintenance personnel.

5-4.4 Employee Areas

5-4.4.1 Staff Break Room. Provide an employee lounge for each new lodging facility. Provide a kitchen area to include a dishwasher, range (cooktop and oven), microwave, and an exhaust hood located on an exterior wall (no recirculating air allowed), and 22 cubic foot refrigerator with automatic icemaker. A 2-compartment kitchen sink, 18 gage brushed stainless steel, satin finish, depth to meet applicable codes, with a gooseneck single-lever faucet and integral spray hose will be included. Provide solid surface counters with integral full height back splashes, and all plywood construction cabinets and counters with hidden hinges, integral routed pulls, raised panel solid oak doors and drawer fronts with melamine interior and fixed shelving, stained to match case goods. Provide artwork, lighting, tables and seating as required and sized based on staff. Provide blocking in the wall to support a wall-mounted 635mm (25") television.

5-4.4.2 Staff Lockers and Showers. Provide staff lockers in the employee areas to support the average historical number of male/female employees. Employee lockers will be double tiered, 300mm x 450mm x 900mm (12”x18”x36”), with molded plastic fronts. Include shower facilities if local codes require.

5-4.4.3 Staff Restrooms. Provide staff toilet facilities as required to match same finish and accessibility requirements of the public toilet areas.

5-4.4.4 Maintenance Shop. Provide a maintenance shop for repair of small equipment and furnishings. Include a workspace for occasional electrical and carpentry work. Provide shelving

and horizontal workspace as required.

5-4.4.5 Cleaning Fluid Storage. This is a separate room intended to store cleaning chemicals. Provide negative ventilation and eyewash station.

5-4.4.6 Grounds Equipment Storage. Where required, provide a storage room with outside access for grounds and building maintenance equipment and supplies, such as lawn mowers, snow removal equipment, garden tools, removable bollards, gasoline, and paint. Determine the types of materials to be stored and design accordingly for the associated fire hazard classification and ventilation requirements.

5-4.4 Service Circulation

5-4.4.1 Corridors and Stairs. Provide service corridors separate from guest corridors. Insure corridor widths can accommodate, transport, and maneuver service equipment. These corridors may serve as fire exits.

5-4.4.2 Service Elevators. Service elevators are required for all buildings more than one story and will conform to NAVFAC Elevator Design Manual DM3.09 and ANSI 17.1. Provide a solid surface interior finish to provide durability and ease of maintenance. Combination freight and passenger elevators are not desired unless the size of the lodging facility does not merit separate elevators. Specify the elevator based on projected capacity and base standard. Size the elevator to accommodate accessibility requirements, furniture moves, housekeeping carts, and emergency stretchers.

CHAPTER 6 -- RESOURCES AND LINKS

This chapter provides a list of references, including other Air Force, Department of Defense and national standards documents that give related guidance, to be used in conjunction this design guide.

6-1 GOVERNMENT PUBLICATIONS:

6-1.1 Government

Americans with Disabilities Act Accessibility Guidelines ADAAG http://www.access-board.gov/adaag/html/adaag.htm

Uniform Federal Accessibility Standards UFAS http://www.access-board.gov

EPA website http://www.epa.gov/cpg/products

Energy Star website http://www.energystar.gov/products

6-1.2 Department of Defense

DoD MIL-HDBK-1190 Facility Planning and Design Guide http://www.ccb.org/
search for "1190" in the title.

UFC 1-200-01, Design: General Building Requirements
http://65.204.17.188//report/doc_ufc.html

UFC 3-120-01, Air Force Sign Standard http://65.204.17.188//report/doc_ufc.html

UFC 3-120-10, Design: General Interior Design Requirements
http://65.204.17.188//report/doc_ufc.html

UFC 3-400-01, Design: Energy Conservation
http://65.204.17.188//report/doc_ufc.html

UFC 3-600-01, Design: Fire Protection Engineering
http://65.204.17.188//report/doc_ufc.html

UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings
http://65.204.17.188/report/doc_ufc.html

UFC 4-010-10, DoD Minimum Standoff Distances for Buildings FOUO

6-1.3 Department of the Air Force

AFPD 32-10 Installations and Facilities http://www.e-publishing.af.mil/

AFPAM 32-1010 Land Use Planning http://www.e-publishing.af.mil/

AFI 32-1022 Planning and Programming of Nonappropriated Fund Facility Construction Projects
http://www.e-publishing.af.mil/

AFI 32-1023 Design and Construction Standards and Execution of Facility Construction Projects
http://www.e-publishing.af.mil/

AFI 32-1032 Planning and Programming Real Property Maintenance Projects Using Appropriated

Funds http://www.e-publishing.af.mil/

AFH 32-1084 Standard Facility Requirements http://www.e-publishing.af.mil/

AJMAN 32-1058, Masonry Structural Design for Buildings http://www.e-publishing.af.mil/

AFI 32-7062 USAF Comprehensive Planning http://www.e-publishing.af.mil/

AFI 33-111, Telephone Systems Management http://www.e-publishing.af.mil/

AFI 33-133, Joint Technical Architecture—Air Force JTA-AF http://www.e-publishing.af.mil/

AFI 34-105 Programming for Nonappropriated Fund Facility Requirements http://www.e-publishing.af.mil/

AFI 34-246 Air Force Lodging Program http://www.e-publishing.af.mil/

AFI 64-101, Cable Television Systems on Air Force Bases http://www.e-publishing.af.mil/

AFI 65-106 Appropriated Fund Support of Morale, Welfare and Recreation and Nonappropriated Fund Instrumentalities http://www.e-publishing.af.mil/

6-1.3.1 Air Force Policies

ETL 01-1, Reliability and Maintainability R&M Design Checklist
http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters

ETL 02-12, Communications and Information System Criteria for Air Force Facilities
http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters

ETL 03-2, Design Criteria for Prevention of Mold and Mildew in Air Force Facilities in Humid Climates http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters

ETL 03-3, Air Force Carpet Standards
http://www.afcesa.af.mil/library/etl.asp?Category=Engineering%20Technical%20Letters

6-1.3.2 Air Force Guides

USAF Project Managers' Guide for Design and Construction
http://www.afcee.brooks.af.mil/dc/products/dcproducts.asp

USAF Landscape Design Guide http://www.afcee.brooks.af.mil/dc/products/dcproducts.asp

USAF Master Landscape Construction Specifications
http://www.afcee.brooks.af.mil/dc/dcd/land/mstrland/mlcs.asp

USAF Sustainable Facilities Guide http://www.afcee.brooks.af.mil/dc/products/dcproducts.asp

USAF Force Protection Design Guide http://www.afcee.brooks.af.mil/dc/products/dcproducts.asp

USAF Interior Design Guides http://www.afcee.brooks.af.mil/dc/products/dcproducts.asp

HQ AFCEE Accessibility Page http://www.afcee.brooks.af.mil/dc/products/dcproducts.asp

USAF Cost Guides/Handbooks http://www.afcesa.af.mil/ (search for "Cost Engineering")

6-2 RELATED NON-GOVERNMENT RESOURCES

American Hotel and Lodging Association http://www.ahla.com/

APPENDIX A -- SPACE PROGRAMMING

Newly constructed VQ will include the required spaces with their associated prescribed sizes as listed in the Planning Factors Table below and the attached ***Space Calculator***. Spaces can be adjusted if one area needs to be slightly larger than another.

Table A-1 Building Planning Factors

Guest Services	SF	SM	Planning Factor
Porte Cochere		-	Size is installation specific – count 50% of actual roof area
Building Entrance / Vestibule	150	13.9	Per facility (if required)
Lobby	4	0.4	Per number of rooms served
Reception	75	7.0	Per desk clerk (1 clerk/100 rooms served)
Concierge Station	80	7.4	Per concierge
Food Service			
Food Service Sales & Prep	650	60.4	Per central facility/complex
Food Service Seating	25	2.3	Per Person (PN=5% of rooms)
Retail	120	11.1	Per central facility
ATM	15	1.4	Per facility/complex
Automated Registration	15	1.4	Per facility/complex
Public Restroom	50	4.6	Per Person (PN=Lobby SF/7SF/PN/15) (verify space required Per current code)
Public Phone	15	1.4	Per phone (1 phone Per 200 rooms)
Conference	25	2.3	Per Personfor each 10 rooms in facility-max 75 seat activity - Per PVA
Guest Corridors/ Circulation (see below)			
Business Center	40	3.7	Per each workstation (1 Per 100 lodging rooms)
Guest Laundry	44	4.1	Per washer/dryer pair (1 pair Per 12 rooms)
Guest Laundry (Training Base)	44	4.1	Add pairs for Tng bases (1 washer/dryer pr Per 8 rooms)
Vending/Ice	60	5.6	Installation specific - 1 Per floor wing

Administration Services	SF	SM	Planning Factor
Training	25	2.3	Per PN (PN=10% of rooms)
Luggage Storage	2.2	0.2	Per lodging room
Communications/Server	125	11.6	Per facility/complex
Administrative Areas			
Manager	125	11.6	Per Person/desk
Asst Manager	100	9.3	Per Person/desk
Exec Secretary	100	9.3	Per Manager
Front Desk Supervisor	80	7.4	Per Person/desk
Clerical	80	7.4	Per Person/desk
Accounting	100	9.3	Per Person/desk
Night Audit/Count	80	7.4	Per Person/desk
Reservation Office	80	7.4	Per Person/desk
Training Office	100	9.3	Per Person/desk
Copy/Work Room	125	11.6	Per Manager
Retail Storage	145	13.5	Per Front Desk Supervisor

Floor Support	SF	SM	Planning Factor
Housekeeping Areas - Linen Storage	20	1.9	Per cart (1 cart Per 15 rooms)
Utility Rooms			
Electrical Rooms	60	5.6	1 Per floor wing
Communication Rooms	60	5.6	1 Per floor wing
Janitors closet	60	5.6	1 Per floor wing

Back-of-House Support	SF	SM	Planning Factor
Janitor Areas			
Janitors Room	80	7.4	Per facility/complex
Cleaning Fluid Storage	50	4.6	Per facility/complex
Housekeeping Areas			
Amenities (coffee, shampoo, soap, etc)	0.5	0.0	Per guest room
Housekeeping Office	100	9.3	Per Person/desk
Housekeeping Asst	80	7.4	Per Person/desk
Linen Storage			
Linen Storage	20	1.9	1 cart Per 10 rooms
Clean Linen	2.7	0.2	Per guest room
Dirty Linen Storage	1.3	0.1	Per guest room
Receiving	1	0.1	Per guest room
Supply Areas			
Bulk Storage (paPer products)	1	0.1	Per guest room
Equipment Storage	20	1.9	100% of Linen Storage
Supply Room Office	80	7.4	Per Person with a desk
Grounds Storage	20	1.9	100% of Linen Storage
Utility Rooms			
Mechanical Room		-	Installation specific
Electrical Room			Installation specific
Communications Room		-	Installation specific
Employee Areas			
Staff Break Room	12	1.1	Per PN (PN= 1 Per 15 rooms)
Staff Lockers	8	0.7	Per employee (1 employee Per 15 lodging rooms)
Staff Restrooms	50	4.6	Per 15 employees (1 employee Per 15 lodging rooms)
Maintenance Workshop	1.5	0.1	Per guest room

APPENDIX B -- SPECIFICATIONS

This chapter provides a list of standard specification items (or equal) to maintain the level of quality expected in AF VQ facilities. They are listed by Construction Specifications Institute (CSI) Division and Section Numbers:

Division 2. Site Construction

Division 3. Concrete

Division 4. Masonry

Division 5. Metals

Division 6. Wood and Plastics

Division 7. Thermal and Moisture Protection

Division 8. Doors and Windows

Division 9. Finishes
Division 10 – Specialties

Section 10801 TOILET AND BATH ACCESSORIES
Specify the following guest room **toilet and bath accessories** below and in Table 8-1.

Figure B-1 Representative Bath Faucet Sets

Figure B-2 Representative Bath Accessories

Figure B-3 Representative Suite Bath Accessories

Table B-1 Toilet Accessories

Item No.	Manufacturer	Model	Description
T1	Shower Solutions	5’ Model	Crescent Rod – curved shower curtain rod in satin brushed stainless steel – cut to fit
T2	Seachrome	SR20-36.000 SRF-500	36 inch shower curtain rod – cut to fit Concealed flange and hanger
T3	Seachrome	SR20-60.000 SRF-500	60 inch shower curtain rod – cut to fit Concealed flange and hanger
T4	Delta (Botanical)	76024-MC	24 inch towel bar in matte chrome
T5	Delta (Botanical)	76018-MC	18 inch towel bar in matte chrome
T6	Delta (Botanical)	76035-MC	Robe hook in matte chrome
T7	Bradley	5234	Dual toilet-paper holder
T8	Bradley	8120-001-36	36 inch grab bar in satin finish stainless steel
T9	Bradley	8120-001-48	48 inch grab bar in satin finish stainless steel
T10	Bradley	8120-001-18	18 inch grab bar in satin finish stainless steel
T11	Bradley	8120-001-42	42 inch grab bar in satin finish stainless steel
T12	Shower Solutions	6’ Model	Crescent Rod – curved shower curtain rod in satin brushed stainless steel – cut to fit Tube: 304 stainless steel, 25.4mm OD, 0.75mm wall thickness, 600 grit finish (bright).Brackets: die cast zinc, chrome plated wall mounts, swivel connectors, and retaining screws
T13	Royal Stone	Corner soap shelf	7 inch radius quarter circle unit
T14	Royal Stone	Bench	18 inch quarter circle fabricated from manufacturer’s cast panel materials
T15	Bradley	947	Retractable clothesline with 6 foot cord
T16	Kohler	K-704210-L-SH	Bypass shower doors

Division 11 - Equipment

Table B-2 Equipment Schedule

Standard Guest Room and Suites		
Equipment	**Features/Requirements**	**Dimensions**
Washers/Dryer (GF/CI)	stacking or combination unit, vent kit or ventless, white, suites only	27-3/8" x 32-1/4" x 72-3/4" (695mm x 819mm x 1848mm (ventless unit/combination unit sizes may vary)
Refrigerators (GF/CI) .	0.15m3 (5.3cf) capacity, freezer above refrigerator, auto-defrost for standard guest rooms and suites	33 1/8" x 23-5/8" x 23-1/2" 213cm x 60cm x 59cm)
Microwave Oven (GF/GI)	Countertop freestanding unit, .02m3 (0.7cf) capacity, 700 watts, glass turntable, child lockout, Braille overlays, white	19" x 12-7/8" x 11" 483mm x 327mm x 279mm

Accessible Guest Room and Suites		
Equipment	**Features/Requirements**	**Dimensions**
Washers (GF/CI)	white, extra-large capacity, combination unit, vent kit or ventless, white, front load, front controls, suites only	26-3/4" x 25-3/4" x 36" 84cm x 65cm x 91cm (ventless unit/combination unit sizes may vary)
Dryers (GF/CI)	white, extra-large capacity, front load, front controls, vent kit	26-7/8" x 25-3/4" x 36" 683mm x 654mm x 914mm (ventless unit/combination unit sizes may vary)
Refrigerators (GF/CI) .	.15m3 (5.3 cf) capacity, freezer above refrigerator, auto-defrost for standard guest rooms and suites	33 1/8" x 23-5/8" x 23-1/2" 711mm x 711mm x 1597mm
Microwave Oven (GF/GI)	Countertop freestanding unit, .02m3 (0.7cf) capacity, 900 watts, glass turntable, child lockout, Braille overlays, white	19" x 12-7/8" x 11" 483mm x 327mm x 279mm

Services Area		
Equipment	**Features/Requirements**	**Dimensions**
Refrigerator (CF/CI)— Employee Lounge.	5m3 (22cf) capacity, side-by-side refrigerator, reversible doors, icemaker, water filter	28" x 28" x 62-7/8" 711mm x 711mm x 1597mm
Disposal (CF/CI)— Employee Lounge	Continuous feed operation, 1/2 HP motor, stainless steel swivel impellors, stainless steel sink flange, overload protector with manual reset, plug/cord accessory	6-5/16" dia x 11-3/8" 160mm dia x 289mm
Microwave Oven— Employee Lounge (GF/GI)	Countertop freestanding unit, .02m3 (0.7cf) capacity, 900 watts, glass turntable, child lockout, Braille overlays, white	19" x 12-7/8" x 11" 483mm x 327mm x 279mm
Laundry Detergent Vending (GF/CI)	Varies	
Ice Dispensing Machine (GF/CI)	Varies	
Employee Lockers	Varies	

Division 11. Equipment
Division 12. Furnishings
Division 13. Special Construction
Division 14. Conveying Systems
Division 15 – Mechanical
Guest room HVAC unit for mounting above ceilings with return-air plenum, filter, filter rack, assembly. 400 CFM min

Table B-3 Plumbing Fixtures

Item No.	Manufacturer	Model	Description
P1	Toto (Carolina)	MS884114	Toilet
P2	Toto (Drake ADA)	CST744SL	Accessible toilet
P3	Kohler (Thoreau)	K-2907	Lavatory – undercounter mount
P4	Delta (Botanical)	2565MC-217MC	Lavatory fixtures in matte chrome
P5			Tub
P6	Delta (Botanical)	1460MC-717MC	Tub fixtures
P7	Royal Stone	36” x 60”	Cast and seamless shower pan
P8	Delta (Botanical)	1430-MCLHP	Shower fixtures in matte chrome
P9	Delta (Botanical)	1430-MCLHP RP32541MC	Accessible shower fixtures in matte chrome
P10	Kohler	K-3314-3	Kitchen sink – self rimming
P11	Delta (Saxony)	473-SS	Kitchen sink fixtures

Division 16 – Electrical

Table B-4 Light Fixtures

Item No.	Manufacturer	Model	Description
L1	Capri Lighting	CFR62H18Q	Recessed can with RQ-R14P trim
L2	Day-Brite Lighting	8-UC	Under cabinet light
L3	CID item	---	Ceiling fan and light kit
L4	CID item	---	Vanity light
L5	NuTone	9960	Bathroom heater and light. Rating: 120V, 60Hz, 1,667 total watts, 5,118 BTU. Heating Element: 1500W. Switch: separate on/off wall switch for heat and light functions. Light: 100W. Night Light: 7W
L6	Capri Lighting	CFR62H18Q	Waterproof shower light with RI-PSH12P trim
L7	CID item	---	Pendant lights
L8	CID item	---	Bedroom wall sconce